PROCEEDINGS

OF THE

EIGHTH ANNUAL MEETING

OF THE

Florida State Horticultural Society

HELD AT

JACKSONVILLE, FLORIDA,

MAY 7th, 8th and 9th, 1895.

COMPILED BY THE SECRETARY.

PUBLISHED BY THE SOCIETY.

FROM THE PRESS OF
E. O. PAINTER & CO.,
DELAND, FLA.

SB.1 F63p

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FLORIDA STATE HORTICULTURAL SOCIETY.

OFFICERS ELECT FOR 1896.

PRESIDENT.

DUDLEY W. ADAMS, Tangerine.

VICE-PRESIDENTS.

G. L. TABER, Glen St. Mary; G. W. MELLISH, DeFuniak Springs; E. O. PAINTER, DeLand.

SECRETARY.

A. H MANVILLE, Jacksonville.

TREASURER.

J. B. ANDERSON, San Mateo.

EXECUTIVE COMMITTEE.

LYMAN PHELPS, Chairman;
E. S. HUBBARD, Federal Point; W. S. HART, Hawks Park;
PRESIDENT, SECRETARY and TREASURER, *ex officio.*

STANDING COMMITTEES.

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COMMITTEE ON INTRODUCTION OF NEW FRUITS.—S. S Harvey Quintette; W T. Swingle, Eustis; H. S. Williams, Rockledge; G. L. Taber, Glen St Mary; G. P Healey, Jaffery

COMMITTEE ON CITRUS FRUITS.—H. B Stevens, Citra; Edward Winter, DeLand; J. A Icenhour, Upsala.

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COMMITTEE ON PEARS AND APPLES.—T K Godby, Waldo; F. Dubois, Tallahassee; W. H Lawrence, Carrabelle.

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COMMITTEE ON TROPICAL FRUITS.—W. A Marsh, Myers; James O'Connell, West Palm Beach; H Frank Boucher, Orlando.

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COMMITTEE ON ENTOMOLOGY.—P. H. Rolfs, Lake City; J. F. Stubbs, DeFuniak; Dr. H. H. Gillen, DeLand.

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COMMITTEE ON TRANSPORTATION.—C. F. A. Bielby, DeLand; M. E. Gillett, Wiersdale; D. Greenleaf, Jacksonville.

SPECIAL COMMITTEES.

COMMITTEE ON JOINT SESSION OF TEXAS AND FLORIDA STATE HORTICULTURAL SOCIETIES.—G. L. Taber, Glen St. Mary; Geo. H. Wright, Orlando; G. W. Mellish, DeFuniak.

COMMITTEE ON BETTER WEATHER WARNINGS.—G. L. Taber, Glen St. Mary; A. H. Manville, Jacksonville.

LIST OF MEMBERS, 1895.

HONORARY.

Berckmans, P. J., Augusta, Ga.
Redmond, D., St. Nicholas.

LIFE.

Healy, G. P., Jaffery.
Manville, A. H., Jacksonville.
Hart, W. S., Hawks Park.
Taber, G. L., Glen St. Mary.
Painter, E. O. DeLand.
Harvey, S. S., Quintette.
Richards, Thos. E., Eden.
Phelps, Lyman, Sanford.
Gaitskill, S. H., McIntosh.
Conner, W. E., 532 Madison Ave., New York City.
Bielby, C. F. A., DeLand.
Tiffin, H. J., Courtenay.
Milligan, Jno. W., Apopka.

ANNUAL.

Adams, Dudley W. Tangerine.
Anderson, J. B., San Mateo.
Armstrong, L. H., St. Nicholas.
Anderson, John, Ormond.
Adams, C. G., Sorrento.
Amsden, E. W., Ormond.
Andrews, J. D., Glen St. Mary.
Andrews, Mrs. K. A., Glen St. Mary.
Adams, Geo. W., Thonotosassa.
Anderson, H. E., Interlachen.

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Bean, E. Jacksonville.
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Bradt, Benjamin N., Huntington.
Bradt, Mrs. Benj. N., Huntington.
Brown, A. H., Manatee.
Boucher, H. Frank, Orlando.
Bosanquet, Louis, Fruitland Park.
Bostrom, J. A., Ormond.
Bostrom, Chas. G., Ormond.
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Burns, Dennis, Pensacola.
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Blake, Mrs. Ellis G., Lake Helen.
Brady, A. Mims.
Burgwin, H. P., Zellwood.
Baker, Chas. Henry, Grasmere.
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Bernd, Peter, Bowling Green.
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Bachman, Sol., Bronson.
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Carter, Mrs. W. H., Holly Hill.
Clarke, B. W., Bushnell.
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Cameron, L., Jacksonville.
Clow, W. S., care of Pittsburg Forge and Iron Co., Pittsburg, Pa.
Cartwright, Geo., Box 6, Interlachen.
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Dreka, G. A., DeLand.
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Duncan, Adelaide M., Ormond.
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Dawson, Mrs. C. L., Seabreeze.
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Griffing, W. D. Maccleny.
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Hastings, G. W., Interlachen.
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Johnson, J. B., Ormond.
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Jenkins, P. L., Seville.
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Jones, W. W., Millview.
Johnson, T. S., Sunnyside.
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Kessler, Thos. V., Pensacola.
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McTureous, Charleston, S. C.

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Noszky, Mrs. H. V., Earleton.
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Prevatt, Mrs. A. B., Seville.
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Post, C. C., Halifax.
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Pitzer, G. R., New Smyrna.
Putney, E. D., Mount Dora.
Pulsifer (Jr.), Roscoe, South Lake Weir.
Pittman, J. H., Tampa.
Pabor, W. E., Pabor Lake.
Palmer, E. K., Columbia, S. C.
Palmer, R. A., Meriden, Conn.
Peck, E. A., 303 Burling St., Chicago, Ill.
Phillips, R. S., 132 Iowa St., Chicago, Ill.
Rogers, J. Thos., Drayton Island.
Richmond, J. F., Richmond.
Reed, W. F., Drayton Island.
Reasoner, E. N., Oneco.
Richards, A. C., Eustis.
Robey, Geo. W., Tampa.
Rolfs, P. H., Lake City.
Rolfs, Mrs. P. H., Lake City,
Rand, Geo. D., Winter Park.
Russell, J. N., Daytona.
Robertson, W. A. R., Inverness.
Rush, John L., New Smyrna.
Rogero, F. E., Armstrong.
Richardson, Otis, Bronson.
Roach, I., Leesburg.
Reeder, Frank E., Welaka.
Richards, Henry W., Eden.
Stoddard, Harry E., Nashua.
Styles, A. F., Jacksonville.
Sampson, F. G., Boardman.
Sampson, Miss O. H., Boardman.
Stewart, A. W., Galt.
Soria, H. N., 14 Union St., New Orleans, La.
Stubbs, J. T., DeFuniak Springs.
Stanley, Mrs. Mary L., Daytona.
Swingle, W. T., Eustis.
Stillman, John E., Jacksonville.
Street, A. W., Ormond.
Stevens, H. B., Citra.
Sellmer, Captain Chas., Zellwood.
Seaton, Wm., Quebec, Canada.
Stebbins, Lucius D., Oriando.
Shimer, Mrs. F. A. W., DeLand.
Slayton, H. H., Glen St. Mary.
Scotton, I. M., Archer.
Scotton, J. A., Archer.
Stewart, H. F., Seabreeze.
Stewart, W. F., Seabreeze.
Stewart, John W., Daytona.
Smythe, A. W. C., Orlando.
Stone, B. W., Thomasville, Ga.
Sampson, Mrs. M. J., Boardman.
Storrs, R. E., Melrose.
Spaulding, Mrs. Alice G., Seabreeze.
Sanders, John M., Cocoa.
Sayles, L. W., Lawtey.
Smith, R. D., Ormond,
Smith, D. G., Madison.
Stauffer, C. F., Lawtey.
St. John, O B., St. Augustine.
Simonds, N., Daytona.
Suydam, J. H., Tampa.
Smith, Julius, Eustis.
Stanton, W. P., 155 St. Clair St., Cleveland, O.
Slocumb, S. G., National City, Cal
Storrie, John, Plainfield, N. J.
Shaw, Wright, 241 Sixteenth St., Brooklyn, N. Y.
Thompson, John, Gotha.
Thacher, O. R., Avon Park.
Taber, J. O., Sanford.
Taylor, Wm. A., Washington, D. C.
Tischler, P., Jacksonville.
Trowbridge, J. O., Waldo.
Taber, Mrs. G. L., Glen St. Mary.
Townsend, W. C., Melrose.
Thomas, W. L., Valdosta, Ga.
Tillman, Hester, Seabreeze.
Thompson, L., Daytona.
Thompson, Mary, Daytona.
Teall, Geo. C., Eau Claire, Wis.
Trimble, W. K., Braidentown.
Terry, J. W., care of G. C. & S. F. R'y, Galveston, Texas.

Troiel, Mrs. Abbie, Wetumpka, Ala
Upham, E. S., South Lake Weir.
VanNess, Eugene, care of Alex. Brown & Co., Baltimore, Md.
VanRoe, J. Tampa.
Varn, W. B., Bartow.
Wilson, Lorenzo A., Jacksonville.
Winter, Edward, DeLand.
Woodworth, N., Welaka.
Wightman, L., Orange Park.
Williams, H. S., Rockledge.
Wright, Geo. H., Orlando.
Weld, John C., Port Orange.
Whitner, J. N., Lake City.
Whitner, Mrs. J. N., Lake City.
Wilson, Geo. W., Jacksonville.
Warner, S. C., Palatka.
Wardwell, W. H., Brookline, Mass.
Wakelin, Amos, Bullitt Building, Philadelphia, Pa.
Webber, H. J., Eustis.
Wright, H. A., Glenwood.
Watson, Thomas C., Pensacola.
Ware, Wm., Glenwood.
Wood, Geo. H., Tangerine.
Wyckoff, John S., Citra.
Wood, O. K., Cocoa.
Watts, S. W., DeLand.
Waugh, Thomas C., St. Thomas.
Wilson, L. E., New Smyrna.
Wade, J. S., Bartow.
Wiley, G. F., Sanford.
Wilkinson, W. P., Hawks Park.
Woodbury, R. G., Duke.
Witherington, H. H., Apopka.
Watson, S. P., Tampa.
Weeks, O. B., Jaffery.
Wilson, P. F., Gainesville.
White, S. H., Ocala.
Wooldridge, N., Tampa.
Woodman, W. J., St. Augustine.
Wilson, (M. D.), Mrs. Mary E., 134 N. Duke St., Lancaster. Pa.
Watters, (A M., M. D.), W., 26 South Common St., Lynn, Mass.
Wilson, F. Page, Lemon City.

395 members Dues $3.

CONSTITUTION.

ARTICLE 1. This organization shall be known as THE FLORIDA STATE HORTICULTURAL SOCIETY, and its object shall be the advancement of horticulture.

ART. 2. Any person may become a Member of the Society by subscribing to the Constitution and paying one dollar. Any person may become a Life Member of the Society by subscribing to the Constitution and paying ten dollars.

ART. 3. Its Officers shall consist of a President, three Vice-Presidents, Secretary, Treasurer, and Executive Committee of three, who shall be elected by ballot at each annual meeting. After the first election, their term of office shall begin on the first day of January following their election.

ART. 4. The regular annual meeting of this Society shall be held on the second Tuesday in April, except when otherwise ordered by the Executive Committee

ART. 5. The duties of the President, Vice-Presidents, Secretary and Treasurer shall be such as usually devolve on those officers. The President, Secretary and Treasurer shall be, *ex-officio*, advisory members of the Executive Committee.

ART. 6. The Executive Committee shall have authority to act for the Society between annual meetings.

ART. 7. The Constitution may be amended by a vote of two-thirds of the Members present.

BY-LAWS.

1. The Society year shall be co-extensive with the calendar year, and the annual dues of Members shall be one dollar.

2. All bills authorized by the Society or its Executive Committee, for its legitimate expenses, shall be paid by the Secretary's draft on the Treasurer, O. K.'d by the President.

3. The meetings of the Society shall be devoted only to Horticultural topics from scientific and practical standpoints, and the Presiding Officer shall rule out of order all motions, resolutions and discussions tending to commit the Society to partisan politics or mercantile ventures.

PROCEEDINGS

OF THE

EIGHTH ANNUAL MEETING

OF THE

FLORIDA STATE HORTICULTURAL SOCIETY.

The eighth annual meeting of the Florida State Horticultural Society was held at Jacksonville upon the invitation of the Board of Trade of that city. The Society convened in the rooms of the Board of Trade on Tuesday, May 7th, 1895, at 8 o'clock, P. M., in accordance with the programme as published, and adjourned, sine die, on Thursday following, at 11 o'clock, P. M. About 150 members were in attendance, and the meeting was one of the most interesting that has been held by the Society.

[In the minutes, which follow, all the events and transactions of the meeting are given, in condensed form, in the order of their occurrence; the addresses, papers, discussions, reports, and other matters of general interest or special importance, are simply noted and appear in full under appropriate heads in the body of the volume.]

MINUTES.

FIRST DAY.

EVENING—OPENING SESSION.

TUESDAY, 8 o'clock, P. M.

1. Call to order by President Adams.

2. Prayer, Rev. L. S. Rader, of Jacksonville.

3. On motion of the Secretary, W. S. Hart and H. G. Hastings were authorized to act as associate Secretaries during this session.

4. Address of Welcome, Hon. D. U. Fletcher, Mayor. (See "Address of Welcome and Response" on another page.)

5. Response to Address of Welcome, President Adams. (See "Address of Welcome and Response" on another page.)

6. President's Annual Address. (See "President's Annual Address" on another page.)

7. On motion, reports of Secretary and Treasurer deferred until next session.

8. Programme for the evening being completed, remaining time devoted to discussion of the freezes of the past winter and their effect. (See "The Freezes of 1894-'95 and Their Effect on the Orange Industry," and "Resuscitating the Orange Groves—How the Frozen Trees Should Be Treated," on other pages.)

SECOND DAY.

MORNING SESSION.

WEDNESDAY, 9.30 o'clock, A. M.

9. Call to order by the President.

10. Secretary's Annual Report—Accepted and approved. (See "Secretary's Annual Report," on another page.)

11. Executive Committee's Annual Report. Amendments to the Constitution and By-Laws recommended, laid upon the table to be taken up at a later session of the meeting. (See "Executive Committee's Annual Report," on another page.)

12. Treasurer's Annual Report—Accepted and approved. (See "Treasurer's Annual Report," on another page.)

13. "The Greater and Lesser Freezes in Florida for a Century and a Half." Paper by Geo. R. Fairbanks, prepared at the special request of the Society and read by the author. Vote of thanks tendered Mr. Fairbanks for his paper. (See "Florida Freezes—The Greater and Lesser Freezes in Florida for a Century and a Half," on another page.)

14. On motion, A. H. Manville, G. L. Taber and J. B. Anderson appointed a Committee on Necrology. (For Report of the Committee see "Necrology," on another page.)

15. Special Committee on Legislative Appropriation called. No report. (For report subsequently received by the Secretary, see "Legislative Appropriation," on another page.)

16. Special Committee on Joint Session for 1896. Texas and Florida State Horticultural Societies, called. Report read by G. L. Taber, chairman. Resolutions of thanks to certain railroad companies and officials for courtesies extended "Joint Session" Committee unanimously passed. Discussion on Joint Meeting. On motion, full powers to act for the Society in arranging for Joint Meeting, as delegated to the committee in original resolution by which it was constituted, were confirmed. (See "Joint Meeting for 1896," on another page.)

17. Special Committee on Investigation of Legislation Designed to Prevent the Introduction of Diseases and Insects, called. Verbal statement by Prof. H. J. Webber, chairman. Bill on the subject, that had been introduced into the Legislature, now in session, read by Prof. Webber; also a substitute bill, now before the Legislature, embodying changes suggested by himself and Prof. Rolfs. Discussion. Subject laid over as special order, to be taken up immediately after the election of officers at the evening session. (See "Legislation Against Fruit Pests," on another page.)

18. Standing Committee on New Fruits called. No report.

19. Amendments to Constitution and By-Laws, recommended by the Executive Committee, taken from the table and unanimously passed. (See "Executive Committee's Annual Report," also "Constitution and By-Laws," on other pages.)

AFTERNOON SESSION.

WEDNESDAY, 2.30 o'clock, P. M.

20. Call to order by the President.

21. Standing Committee on Cataloguing the Fruits of Florida, called. Report read, and catalogue submitted, by A. H. Manville, chairman. Resolution passed authorizing the publication of the Catalogue, as submitted, with the proceedings of the eighth annual meeting. (See "Catalogue," which includes the report of the committee, on another page.)

22. Standing Committee on Nomenclature, called. No report. At a later ses-

sion, E. S. Hubbard, of this committee, made a verbal report on varieties of oranges. (See "The Best Varieties of Oranges for General Planting," on another page.)

23. Standing Committee on Citrus Fruits, called. Paper, by H. S. Williams, chairman, read by the Secretary. (See "After the Great Freeze," on another page.)

Paper by A. L. Duncan, of the committee, read by the Secretary. (See "The Orange Groves of the West Coast," on another page.)

24. Invitation presented by the Jacksonville Board of Trade, to members and accompanying ladies, for an excursion to Pablo Beach, on Thursday afternoon. Unanimously accepted.

25. Discussion (under topic of Citrus Fruits) on the importance of a better system of weather warnings. On motion, the First Vice-President and Secretary were appointed a committee to investigate the subject and recommend a system to the Society. (See "Better Weather Warnings Wanted," on another page.)

26. Discussion (under topic of Citrus Fruits) on the comparative hardiness of different citrus stocks. (See "Comparative Hardiness of Different Citrus Stocks," on another page.)

27. Standing Committee on Diseases and Insects of Citrus, called. Paper by C. A. Bacon, member of the committee, read by Prof. H. J. Webber, chairman. (See "Diseases and Insects of Citrus," on another page.)

Verbal report by Prof. H. J. Webber, chairman. (See "The Sub-Tropical Laboratory—Some Results of the Year's Work in the Investigation of Plant Diseases," on another page.)

28. Discussion (under topic of Diseases and Insects of Citrus) on the freeze, its effects on orange trees, and its lessons. (See "The Lessons of the Freeze," on another page.)

29. Standing Committee on Tropical Fruits, called. Paper read by Thos. E. Richards, chairman. (See "Tropical Fruits on the East Coast," on another page.)

EVENING SESSION.

WEDNESDAY, 7.30 o'clock, P. M.

30. Call to order by the President.

31. Election of officers. (See List of "Officers for 1896," on an initial page.)

32. Vote of thanks to A. H. Manville for donation of $75.

33. Subject of Legislation Designed to Prevent the Introduction of Diseases and Insects called up. Continued as a special order for Thursday evening.

34. Standing Committee on Tropical Fruits, called. Paper read by O. R. Thacher, member of the committee. (See "Tropical Fruits," on another page.)

35. Standing Committee on Grapes, called. No report. A brief report on grapes, by G. W. Mellish, reached the Secretary after this topic was passed. (See Notes on Grapes in West Florida," on another page.)

36. Standing Committee on Kaki, called. No report.

37. "The Plant Louse of the Melon," a special paper prepared and read by Prof. H. J. Webber. (See "The Plant Louse of the Melon, and its Prevention," on another page.)

THIRD DAY.

MORNING SESSION.

THURSDAY, 9.30 o'clock, A. M.

38. Call to order by the President.

39. On motion, regular order sus-

pended, and one hour devoted to five-minute talks on the condition of the orange trees in the different sections, and the best method of treating them. (See "Resuscitating the Orange Groves," on another page.)

40. Standing Committee on Strawberries and Miscellaneous Fruits, called. No report.

41. Standing Committee on Peaches and Plums, called. No report. Notes on this subject, by G. W. Mellish, were handed the Secretary after the topic had been passed. (See "Peach Culture on the West Florida Highlands," on another page.)

42. Discussion on Peaches and Plums. (See "Peaches and Plums in South Florida," on another page.)

43. Standing Committee on Pears and Apples called. No report. Report from S. S. Harvey, chairman, subsequently received by the Secretary. (See "Pear Culture," on another page.)

44. Discussion on Pears and Apples. (See "Pears and Apples," on another page.)

45. On motion, regular order suspended, and thirty minutes devoted to discussing the varieties of oranges. See "Best Varieties of Oranges for General Planting," on another page.)

46. Standing Committee on Figs, called. No report.

47. Standing Committee on Ornamentals, called. Papers from Mrs. W. H. H. Holdridge, chairman, and A. V. Clubbs, of the committee, read by the Secretary. Discussion. (See "The California Privet as an Ornamental Hedge Plant," "Ornamental Planting," and "Azaleas and Palms," on other pages.)

Afternoon—Excursion.

EVENING SESSION.

THURSDAY, 7.30 o'clock, P. M.

48. Call to order by the President.

49. Committee on Final Resolutions appointed, as follows: H. G. Hastings, G. L. Taber, R. E. Storrs.

50. Standing Committee on Native Fruits, called. Paper by A. W. Stewart, member of the committee, read by the Secretary. (See "Our Native Fruits," on another page.)

51. Standing Committee on Fertilizers, called. Paper read by Stephen Powers, chairman. (See Fertilizers and Fertilizer Inspection," on another page.)

52. Place of next meeting taken up. Invitation from Jacksonville Board of Trade to hold the next annual meeting in Jacksonville read by E. Bean. Unanimously accepted.

53. Vice-President Mellish called to the chair by the President.

54. Subject of Legislation Designed to Prevent the Introduction of Diseases and Insects taken up as a special order. Discussion. Certain changes recommended in the bill before the Legislature on this subject. President Adams chosen a committee of one to visit Tallahassee and urge the views of the Society upon the Legislature. (See "Legislation Against Fruit Pests," on another page.)

55. Standing Committee on Entomology, called. Paper read by Prof. P. H. Rolfs, chairman. (See "Insects and Insecticides," on another page.)

56. Secretary stated that a written report had been received from Irving Keck, member of the Committee on Peaches and Plums. On motion, the report was ordered filed for publication. (See "Peaches and Plums in South Florida," on another page.)

57. Standing Committee on Marketing, called. No report.

58. Standing Committee on Irrigation, called. Paper by G. H. Wright, chairman, submitted by the Secretary. (See "Irrigation," on another page.)

59. Report of Committee on Final Resolutions unanimously adopted. (See "Resolutions of Thanks," on another page.)

60. Adjourned SINE DIE.

MEMBERS PRESENT.

As stated above, it is estimated that about 150 members were in attendance. Of these the following registered with the Secretary.:

Dudley W. Adams,	E. W. Amsden,	Rev. B. Swing Hall,	G. S. Hardee,
H. E. Anderson,	J. B. Anderson,	Henry J. Hampton,	E. K. Harris,
J. D. Andrews,	Mrs. K. A. Andrews,	John W. Harding,	Mrs. E. A. Hastings,
C. Baillie,	E. Bean,	W. S. Hart,	Thos. Hind,
W. Gordon Bedford,	John J. Beers,	H. G. Hastings,	Dr. G. W. Holmes,
Peter Bernd,	Ellis G. Blake,	W. H. Holdridge,	E. S. Hubbard,
Mrs. Ellis G. Blake,	H. L. Boone,	T. J. Howard,	J. A. Icenhour,
Wm. A. Bradford,	Benj. N. Bradt,	J. M. Hughart,	Cyrus Jones,
Mrs. Benj. N. Bradt,	E. W. Braman,	T. S. Johnson,	W. H. Lawrence,
E. Burger,	H. P. Burgwin,	J. B. King,	Geo. W. Leonard,
Otto C. Butterweck,	L. Cameron,	Young G. Lee,	D. E. Lowell,
James Carnell,	B. W. Clarke,	W. J. Lewis,	F. R. McElroy,
N. L. Clarke,	W. A. Cooper,	B. F. McGraw,	G. W. Mellish,
John F. Cogswell,	Dr. J. B. Curtis,	A. H. Manville,	T. N. Milton,
D. D. Crews, Jr.,	Ed. Delowest,	S. G. Miller, M. D.,	B. F. Mosly,
Dr. A. W. DeLong,	G. A. Dreka,	M. M. Miner,	H. V. Noszky,
H. F. Douglass,	J. P. Felt,	J. P. Nevins,	W. E. Pabor,
Geo. R. Fairbanks,	Albert Fries,	Mrs. H. V. Noszky,	E. O. Painter,
H. Friedlander,	Dr. H. H. Gillen,	E. T. Paine,	Lyman Phelps,
S. H. Gaitskill,	C. M. Griffing,	D. W. Perry,	Dr. E. E. Pratt,
D. Greenleaf,	H. C. Groves,	Stephen Powers,	Frank E. Reeder,
W. D. Griffing,	Mrs. L. H. Gurney,	Roscoe Pulsifer, Jr.,	Thos. E. Richards,
L. H. Gurney,	E. C. Hammond,	Harry W. Richards,	Mrs. P. H. Rolfs.
		P. H. Rolfs,	John M. Sanders,
		F. G. Sampson,	J. M. Scotton,
		L. W. Sayles,	H. H. Slayton,
		J. A. Scotton,	Mrs. M. C. Stanley,
		Mrs. A. C. Spaulding	H. B. Stevens,
		D. G. Smith,	W. F. Stewart,
		C. F. Stauffer,	R. E. Storrs,
		H. F. Stewart,	J. H. Suydam,
		John E. Stillman,	Mrs. G. L. Taber,
		A. F. Styles,	W. L. Thomas,
		G. L. Taber,	Mary Thompson,
		O. R. Thacher,	P. Tischler,
		L. Thompson,	S. C. Warner,
		H. J. Tiffin,	H. J. Webber,
		W. C. Townsend,	Lorenzo A. Wilson,
		S. P. Watson,	L. Wightman,
		O. B. Weeks,	P. F. Wilson,
		Geo. W. Wilson,	Edward Winter,
		W. J. Woodman,	John S. Wyckoff.

ADDRESS OF WELCOME AND RESPONSE.

[SEE MINUTES ON PAGE 1, ITEM 4.]

HON. D. U. FLETCHER, Mayor of the City of Jacksonville, was introduced by the President, and welcomed the Society as follows:

MR. PRESIDENT, LADIES AND GENTLEMEN—From the earnest faces before me, I am led to believe that you are here for business, rather than for the purpose of listening to speech-making. I, therefore, shall not detain you with any dissertation on the subject of horticulture, or otherwise delay your proceedings. I am here simply in recognition of the great work which this Association is doing in the State, and to express to you the honor which we feel in having our city selected as your meeting place and the pleasure which your presence gives us.

You may have heard that Jacksonville people were not altogether a unit on some questions; that there were some differences of opinion among us—that, in fact, there might be even antagonism upon certain views in this community; but I wish to assure you that those things are exaggerated to some extent, in the first place, and in the next place, that whatever may be our internal differences of opinion in regard to certain subjects, they do not extend to our friends, and that we are a unit when it comes to greeting our friends on occasions of this kind, and that, as one man, we are gratified to have you with us, to extend our hospitality, and in wishing you abundant success in all your doings.

I remember that one year ago I had the honor of welcoming this Horticultural Association to Jacksonville, and I recall how buoyant and how cheerful the members were on that occasion. I remarked then, that I had never seen assembled, at any time, under any circumstances, anywhere, a more intelligent body of men and of women than I saw on that occasion. I will not say what I think of them now, because you might think I am wanting something. But I recall, also, that the chief subjects of discussion at that time were, first the question of overproduction: You wondered what we were going to do with this vast orange crop that we were producing, year after year, and that was so tremendously increasing; where were we going to find a demand for this enormous supply; what were we going to do about rates on this immense crop? You also talked about diseases and insect enemies, and other problems that confronted the fruit grower. I believe that these questions have been largely settled by circumstances beyond your control, and I am sorry to say that they have been settled in the way in which they have been settled. I have felt, to be frank, that those people who contended that out of our misfortune there would come triumph, and that this seeming calamity was but a blessing in disguise, were saying things they did not actually believe. I am encouraged by your presence this evening; I feel more cheerful on that subject than I have felt heretofore, because I tell you frankly I have been unable to see how a blessing could come from such a calamity as befell us last winter. I have been unable to see that diversified production, which was heralded as a great panacea, would restore Florida to what she was before this freeze, and would put into the pockets of her citizens the property which was swept from

them in one night. It has seemed to me that the results of the work and toil of a lifetime, of the struggle and labor of years and years, which a great many people had to undergo, and the expenditure of vast sums of money, which they had invested, to obtain these results—it has seemed to me that these results, which were stricken down, absolutely swept from the face of the earth in one night, could only be recovered by further expenditures of money and longer times of toil and struggle, and years of deprivation and waiting, and industry, and almost want. It did seem to me that that misfortune meant something to Florida which could not be replenished or replaced by simply diversifying our products and by giving vent to our hope and our pride in our climate and our faith in our soil, and all that sort of thing; because it was different from a case where a vast sum of money and the accumulation of years goes from your pocket into mine, and from mine into others. Here was a case where the property was absolutely destroyed, as if it had been burned up; here was a case where it was not a question merely of the loss of one crop, of one season, but the loss of years and years of work and toil and struggle and expenditure. But I am encouraged this evening by seeing you here, and in this presence I feel hopeful; and I do believe that with our climate, and with our soil, and with the brain and the industry of such people as we have in Florida, that eventually she will triumph over all such adversity. [Applause.]

Now again, friends, I extend to you our hospitality, our most cordial greeting, and I trust and believe that from your work, and your labors and your endeavors, great good will come to the State, and that the development which we hope and depend upon will follow. [Applause.]

RESPONSE BY PRESIDENT ADAMS.

[SEE MINUTES ON PAGE 1, ITEM 5.]

MR. MAYOR—In behalf of the Society I wish to say that as an organization and as individuals, we are deeply sensible of the kindness and the hospitality shown us by the people of Jacksonville. It has been our custom to meet one year in one place, another year in another place, and wherever we have been the citizens, as a whole and as individuals, have given the Society a hearty welcome. We have always been made to feel that we went there, not as strangers, not as mendicants, but as a Society that had at heart the welfare, not only of ourselves as individuals, but of our State as a whole.

It has sometimes been thought and argued by members of our Society that as long as we went to a small place we would be more recognized, that we would be more warmly welcomed, and that idea for some time made it seem advisable for us to meet in smaller places; but, finally, it was decided, on the solicitation of the gentlemen from Jacksonville, to meet here, and last year we tried the experiment. So well satisfied were we with your reception, with the way Jacksonville responded to our wants, that by a unanimous vote it was decided to return, and again we are here to again thank you for your kind hospitality.

Perhaps it is not necessary, certainly not worth while, to occupy your time and the time of the Society, in repeating what everybody feels, and what everybody in Jacksonville knows we feel, towards the citizens of this place. We appreciate your kindness and we hope that our coming here will be a benefit, not only to the individuals of the Society, but to the State, and agreeable to the people of Jacksonville. [Applause.]

PRESIDENT'S ANNUAL ADDRESS.

DUDLEY W. ADAMS.

[SEE MINUTES ON PAGE 1, ITEM 6.]

LADIES AND GENTLEMEN OF THE FLORIDA STATE HORTICULTURAL SOCIETY: In the year 1854 I had the honor to be elected President of our County Agricultural Society. That was forty-one years ago. During most of that forty-one years, it has been my fortune to be connected with County, State and National Agricultural and Horticultural organizations in an official capacity. In the line of duty it thus very often happened that I had something to say on public occasions, and I assure you that it has always been a very pleasant duty at such times to address my brother tillers of the soil. Especially has this been the case at the annual meetings of the Florida State Horticultural Society, for our Society and our business have been such that it has been an unalloyed pleasure to express pride at our past progress, satisfaction at our present position, and bright hope for our future advancement.

Representing, as we have, the most prominent industry of the State, one that was growing and commanding increased attention, it was easy and pleasant to talk. When I say that for the last decade horticulture has been the most prominent industry of the State, it is not said in disparagement of any of her other great industries. I fully recognize that her cotton is fine and silky, her corn grows tall, her cane grows sweet, yet the fact is potent that Florida's fame at home and abroad has been builded and rests upon the delicious horticultural products that only Florida sunshine and Florida showers can bring to the acme of perfection.

I know I was proud of our Society and proud of the great interest whose representative it is. I am sure that that pride was justifiable and commendable. I know that our members were in a similar state of mind; in fact, we were away up high, and now I am reminded of these words of Shakespeare:

> Farewell, a long farewell to all my greatness.
> This is the state of man: to-day he puts forth
> The tender leaves of hope; to-morrow blossoms,
> And bears his blushing honors thick upon him:
> The third day comes a frost, a killing frost,
> And when he thinks, good easy man, full surely
> His greatness is a-ripening, nips his root
> And then he falls as I do. I have ventured,
> Like little wanton boys that swim on bladders,
> These many summers in a sea of glory,
> But far beyond my depth, my high blown pride
> At length broke under me and now has left me.

To-day, instead of enjoying this opportunity to address you, I approach the task with sadness and uncertainty. I am at a loss what to say. But I am sure there are thousands in our State that are silently asking the question, "Where am I at?"

From my present point of view, that should be the first question answered by this Society. Disguise it as we may, belittle it as some do, it is a solemn fact that a terrible calamity has befallen the horticulture of our State.

Now, "Where are we at?" The Florida State Horticultural Society should not approach that subject as an attorney advocating either side, or any particular

view. We should sit in calm, unbiased judgment and try to reach a sound, just answer.

I believe civilized society, as now organized, recognizes the propriety, under certain circumstances, of deceiving other people. To deceive others in statesmanship is called diplomacy; to deceive the enemy in war is called strategy; to deceive others in business is called financiering; to deceive in love is coquetry; to deceive ourselves has no special nomenclature, but the general term idiocy will do very well.

There doubtless are means of grace provided for those who indulge in diplomacy, strategy, finance, and even coquetry; but for deliberate and intentional idiocy there can be no atonement.

In approaching this subject of the future of Florida horticulture (whatever else we may do) do not let us deceive ourselves. The optimist cannot be allowed to sit in this court—his place is in regions above. The pessimist is disqualified—his place is in regions below. In looking at the wrecks of our groves, we admire the man who has courage, but we lean upon and trust and follow the man who has discretion. The bull that tried to butt a locomotive off the track had magnificent courage, but one with more discretion now leads the herd. The topics that usually have occupied our time will have diminished interest. The transportation and marketing of our orange, lemon and pineapple crops are settled for the present. With courage to face unfavorable obstacles, with discretion to avoid irresistible disaster and unjustifiable risks, let us counsel together concerning the future of Florida horticulture, and whatever we do, let us not deceive ourselves. This now is the burning question. In view of the recent disasters, is it judicious for a man to engage in Florida horticulture?

Is Florida horticulture of such a kind that a man will be justified in giving his capital and best thought and energies to making it a business success? There are thousands of people in Florida and elsewhere who are anxious for an answer.

The press of the State, with practical unanimity, have already answered this in the negative. Their verdict is that Florida horticulture is so extra hazardous that it should only be indulged in as a secondary crop after producing something to eat. In other words, the tone of all the Florida press seems to be that a man who spends a large part of his time and thought and study in growing corn, peanuts, chufas, razorbacks and crab grass, and a few oranges, will be more wise, and consequently more successful, than one who devotes his entire energy and skill and time to the economical production of a horticultural product of the highest excellence. If this is so, we all want to know it. If it is true that a man who spends half his time in growing pigs and peanuts can grow fine fruit and successfully compete with one who makes fine fruit a life study, we want to know it. If a man can market a few hundred boxes of fruit, grown without special skill to as good advantage as a large and skillful packer, we want to know that. We want facts. If that is the way to do, let us do it. If skill and study and labor intelligently applied to fruit growing will not pay, we want to know that. It may not be out of the way to read some extracts from the leading Florida press to show their position on Florida horticulture. One says:

"I think there is one valuable lesson to learn that may make the damage to groves worth all it has cost, and that is not to place entire dependence on one crop. It emphasizes the frequent injunctions of the Ruralist and other papers for every farmer

and horticulturist to grow, as far as possible, the living for the family and stock at home."

A leading, perhaps the leading paper in the State, says: "Exposed as our groves were to the inevitable polar waves, which were continually threatening their destruction, we felt that those who made this one crop their sole dependence were not only taking too great risks, but delaying the State's proper development. * * * We adopted an editorial policy radically different from the so-called agricultural, but almost purely horticultural papers then published in this State. * * * And now behold what a change has come over those same journals in the brief space of two months! Open them where we will, it seems as if we were reading from the pages of our own original Farmer and Fruit Grower. It is food crops, fodder live stock, on every page."

Commenting on this, another prominent paper says: "A dozen or more years before the establishment of this paper, whose editor adopted a policy radically different from other so-called agricultural journals then published in the State, this journal was urging the people to diversify their crops, not to put all their eggs in one basket. * * * That the Agriculturist has always advised diversification of crops is too well known to need reiteration, and that it has done everything in its power to encourage people in this matter for nearly a quarter of a century is well known to thousands of Floridians who have perused its columns during that period. The only good result that can possibly result from the freeze, so far as we can see, is that it will emphasize what the Agriculturist has been trying to impress upon our people for years."

Another paper said: "It is only men of abundant means who should depend on orange culture as a single crop. Men who require a sure income for the support of their families should never build all their hopes on an orange grove."

Another paper said: "Special crops, or cash crops as they are termed, are good and should be grown; but let them be side-lines, and what we consume be made the first consideration."

These are fair samples of the tone of the Florida press. It is practically unanimous in the opinion that horticulture in this State is of such an extra hazardous nature that it cannot be recommended to any one as a business. So far I am not aware that any writer, editorial or correspondent, has had the courage or disposition to dispute the correctness of this position. But is it true? Is it a fact that Florida horticulture, as a business, is doomed? Is it a fact that thenceforth Florida horticulture is to be only the tail of an agricultural kite? Can it be true that the only business that ever gave Florida a name and standing before the world has been knocked out?

It has been horticulture, almost exclusively, that has brought the great stream of immigration to our State during the last twenty-five years. Must we now endorse the press of the State in its stand that Florida horticulture is a failure except as an incident? Shall we allow it to go out to the world that any one who settles in Florida must grow what he eats, for horticultural or other cash crops cannot be depended on to buy food for a family? We owe it to ourselves and to our State to calmly and courageously approach this subject and look it squarely in the face. If it is true that we cannot rely upon horticulture with reasonable confidence to furnish cash for our necessities and reasonable luxuries—if we must depend on peanuts, cowpeas and razorbacks to eke out a

subsistence, we want to know it, we want to know it now. If an intending settler or friend writes us inquiring as to the resources of the State, what shall we do or say? Shall we send him a Florida paper? One of our agricultural papers that advocates "diversification" as a panacea for all our ills gives the following item, which may be useful to an intending settler as showing the best that can be done with our superb agricultural capabilities:

"Mr. D. C. Silvers killed a pig the other day that dressed 100 pounds. Mr. Silvers kept him in a pen and gave him proper attention." When the people of the United States become generally informed that by keeping a pig in a pen and giving him proper attention we can make him weigh the enormous avoirdupois of 100 pounds net, then we may look for a general transfer of the swine business of the country to Florida.

Here is another item from another agricultural paper showing the opulence that rewards, presumably, the most successful farmer in St. John's county, Florida, by diversification:

"I have invested $500 in cattle in the last twenty years and during the same period have sold over $1,500 worth and have to-day 200 head of c ttle. I own considerable land, but have only twelve acres under cultivation." It also states that this man grows fifteen bushels of corn per acre, on an average, and two acres of cane.

Look at that! In twenty years this unusually successful man, so unusually successful as to be held up as remarkable, has sold $1,000 worth of stock more than he has bought—that is $50 a year!!! for stock sold. As the average value of live stock in Florida is $6.35, his 200 head are worth the munificent sum of $1,270 at the end of twenty years of labor.

It occurs to me that if orange growing, or any other branch of horticulture, makes as discouraging a showing as "Silver's pig" or Master's "cows and corn," we need to know it at once.

Under present conditions, our usual topics of how to plant and cultivate and fertilize, and what to plant; pruning, marketing, transportation, etc., etc., will command abated interest. The first thing is to find out if we have in Florida a substantial horticulture worthy of the name, and worthy the time, study, capital and effort of able, industrious, prudent business men. If we have such a horticulture, let us give to it our best thought, our deepest study, our untiring, unconquerable energies, and restore it to and raise it above the proud position it has heretofore occupied in the eyes of the world. If it is not such a business, if it is not such a one as wise, prudent, able business men can properly engage in—if thought and study and industry have not a reasonable opportunity for reward when applied to Florida horticulture, let us, let the world know it. The men engaged in horticulture in Florida are capable of bigger things, and a laudable ambition impels them to strive for bigger things than Silver's pig or Master's corn and cows.

The Florida horticulturist is a man who has mind and ambition and self respect. He is, and knows that he is, the equal in those respects of the merchant, lawyer, professor, or manufacturer. He expects to make as much money, to live in as good a house, as well furnished, and enjoy as much of life and its comforts, and educate his children as well as men in other callings. If he can do this he is satisfied. He will give his mind, energies and study to the work. As Chicago rose from her baptism of fire, so will Florida rise from the devastation of frost, purified and exalted.

SECRETARY'S ANNUAL REPORT.

[SEE MINUTES ON PAGE 1, ITEM 10.]

MR. PRESIDENT AND MEMBERS OF THE FLORIDA STATE HORTICULTURAL SOCIETY:—The most important item for the year, in this department of the Society's work, has been getting out THE PROCEEDINGS OF THE LAST ANNUAL MEETING.

While the printing and proof reading of the published report have been done entirely by the State Commissioner of Agriculture (at the expense of his Department, as set forth in the initial pages of the volume), compilation, as well as mailing, has devolved upon the Secretary's office. The edition was issued in January, and a copy immediately mailed each member. Perhaps the chief criticism will be on account of its tardy appearance; but this was unavoidable, as the work was done as early as the facilities of the Commissioner permitted, and it was obviously impracticable, in view of the Commissioner's liberal offer and the Society's limited resources, for the Executive Committee to undertake publication.

WORK OF THE YEAR.

In addition to the routine work and the ordinary correspondence of the office, special communications and printed matter have been issued as follows:

Sept. 5th. Letter to each member, requesting that candidates for the Legislature be interviewed in regard to appropriation for the publication of the Proceedings of the Society, each letter being accompanied by a printed circular setting forth the desirability and appropriateness of the appropriation. The numerous communications elicited, which, with few exceptions, indicated a favorable attitude on the part of legislators toward the appropriation desired, were, by direction of the Executive Committee, transmitted to the Chairman of the Committee on Legislative Appropriation, at whose request the letter and circular were sent out.

Oct. 2d. A letter to each delinquent member, calling attention to the importance of renewing membership in order that name and address might be included in list of members in published report for 1894. Over forty annual membership fees for 1894 and one life membership were received in response to this notice.

Nov. 25th. Circular letter to each member appointed upon committee by the President, with list of all committees, as appointed to report at next meeting, and definition of usage of the Society as to committees and their duties.

Jan. 21st. Circular to each member paid for 1894, stating that annual report for said year had been mailed. This circular announced annual meeting for current year and suggested renewal of membership to members not paid for 1895.

April 10th. Circular letter to each editor of the State Press, enclosing announcement of annual meeting and requesting notice.

April 10th. Circular letter to all delinquents, announcing approaching meeting and calling attention to the importance of renewing membership in time to receive credentials.

April 20th. One thousand copies of cir-

cular issued by the Jacksonville Board of Trade sent out.

April 20th. Credentials, announcements, etc., to all members paid for the current year.

Copies of letters, circulars and printed matter sent out as above accompany this report.

THE PRESS.

Copies containing notice of the present meeting have been filed with the Secretary by the following papers and periodicals:

STATE AGRICULTURAL PRESS: Weeklies, extended notice—Florida Farmer and Fruit Grower, Jacksonville; Florida Agriculturist, DeLand. Monthlies, extended notice—Florida Ruralist, Interlachen; Florida Grove and Garden, Jacksonville.

STATE DAILIES: Extended notice—Times, Tampa; Citizen, Jacksonville; Times-Union, Jacksonville.

STATE WEEKLIES: Extended notice—Commercial, Leesburg; Star, Titusville; Courier, Plant City; Sentinel, High Springs; Sentinel, Maccleny; Buoy, St. Andrews; News, Leroy.

Brief mention—Times-Democrat, Bronson; Gazette, Oviedo; Guide, Chipley; Gazetteer, West Palm Beach.

Also extended notice in the South Florida Home (monthly), St. Petersburg, and by the Noble Newspaper Union, in a long list of State papers for which this company furnish "ready print" matter.

The notices referred to above accompany this report.

In view of the uniformly courteous treatment of the State Press, I would suggest that a complimentary copy of this year's annual report be sent the editor of each State paper.

COMMUNICATIONS.

Mr. P. J. Berckmans, President of the American Pomological Society and the Georgia State Horticultural Society, to whom, as a non-resident honorary member, a special invitation was sent to be present at this meeting, in a communication, which accompanies this report, says: "Please convey to the officers and members of your Society my best wishes for the success of your meeting, and my regrets that I am so situated as to be unable to meet with you and participate in your deliberations."

Other communications intended for the Society relate to the business of the session, and will come up under their appropriate heads.

MEMBERSHIP.

The following is an exhibit of the membership (taken May 7th, 1895, at 7.30 P. M.):

Life members	12
Annual members (fully paid for 1895)	304
Total active members	316
Honorary members	2
Total members in full and regular standing	318

In addition to the foregoing, the rolls show:

Members paid for 1894 but delinquent for 1895	149
Discontinued members	221

NECROLOGY.

Five members have died since last meeting, as follows: On July 9th, 1894, E. E. Chaffee, of Ankona, Fla., annual member for 1893; on October 18th, 1894, J. K. Hawkins, of Brunswick, Ga., annual member for 1894; on January 28th, 1895, James C. Ballard, of Lake City, Fla., annual member for 1894; on April 4th, 1895, R. W. Pierce, of Sunset Hill, Fla., annual member for 1894; on April 30th, 1895, Davis Tilson, of Leesburg, Fla., and Rockport, Me., annual member for 1895.

Such notices as have reached me in regard to the decease of the above mentioned members accompany this report.

FINANCIAL.

Total amount collected for account of the Society and turned over to the Treasurer from May 20, 1894 (when term of present Secretary began), to date (May 7, 1895) inclusive		$352 00
As follows:		
Dues for 1892	$ 1 00	
Dues for 1893	2 00	
Dues for 1894	43 00	
Dues for 1895	193 00	
Dues for 1896	5 00	
Life memberships	30 00	
Extra report for 1894	1 00	
Donations	77 00	$352 00

RECOMMENDATION.

Our present law provides that the Secretary's term of office shall begin on the 20th of May, over a month after the time fixed for the annual meeting. As a result, the work of getting the proceedings ready for publication cannot be taken up until some weeks after adjournment, and the executive routine is practically hung up during this interval.

Again, the work of the Society year, so far as the Secretary's office is concerned is not completed until the report of the annual meeting has been issued. For the advantage of the Society, as well as the satisfaction of the incumbent of this office, it is obviously desirable that the officer upon whom devolves the work of preparing for the annual meeting, which begins early in the year, and who goes through the meeting as Secretary, and upon whose notes the report must be based, should complete the report and carry the membership to the close of the membership year.

The annual meeting, in its entirety, is a unit. From the necessary initial steps, to the completion of its report, and the close of its membership year, it is one thing. It fills and rounds up the year.

Each year with its meeting stands distinct and apart, by itself. New plans must be made for each meeting—plans extending through the year—and it is clearly essential to success that these plans be carried out on the same lines and in the same spirit in which they are begun.

I would suggest, therefore, that action be taken providing that the Secretary's term of office begins January 1st and continue until December 31st of the same year.

Respectfully submitted,

A. H. MANVILLE,
Secretary.

TREASURER'S ANNUAL REPORT.

[SEE MINUTES ON PAGE 1, ITEM 12.]

1894			
Amount on hand as per report at last meeting		63 95	
April 10. Rec'd from Sec'y Brown		100 00	
April 12. Rec'd from Sec'y Brown		100 00	
May 26. Rec'd from Sec'y Brown		22 72	
Nov. 13. Rec'd 5 per cent. dividend on deposit in Palatka Bank		6 98	
1895.			
Feb. 11. Rec'd from Sec'y Manville		125 00	
May 7. Rec'd from Sec'y Manville		227 00	
Total receipts			$645 65

CONTRA.

1894.		
June 11. Paid Secretary's draft No. 1.		
Stenographer's services, '94 meeting	66 00	
Advertisement in Times-Union	40	
Postage	10 00	
Expressage	25	
Typewriter supplies	4 00	
	80 65	
August 20. Paid Secretary's draft No. 2.		
Drew Co., stationery supplies and printing	20 88	
DaCosta Co	1 25	
Expressage	1 40	
Freight	39	
	23 92	

December 31. Paid Secretary's draft No. 3.

Postage	20 00
Drew Co. stationery supplies, etc.	12 00
McFarland Printing Co.	7 35
Freight	5 15
Expressage	2 95
	47 45

1895.

February 11. Paid Secretary's draft No. 4.

Postage	32 00
Drew Co., stationery supplies, etc.	20 35
Freight	2 00
Expressage	1 40
	55 75

May 7. Paid Secretary's draft No. 5.

Postage	20 00
Stenographer's services, taking minutes, etc.	80 00
Secretary's salary	75 00
Stationery supplies, printing, etc.	34 75
Rebate on fees, not paid	2 00
Freight and expressage	1 90
Advertising	1 40
	$215 05—$422 82
Balance on hand	$222 83

Respectfully submitted,

J. B. ANDERSON,
Treasurer.

EXECUTIVE COMMITTEE'S ANNUAL REPORT.

[SEE MINUTES ON PAGE 1, ITEM 11.]

Since the last annual meeting of the Society, the Executive Committee have held four meetings. as follows: Palatka, May 29th, 1894; Jacksonville, December 26th, 1894; Jacksonville, February 5th, 1895; Jacksonville, May 7th, 1895.

Omitting routine work, the following is a synopsis of what the committee has done during the year:

At the meeting of May 29th, 1894: Plans submitted by the Secretary for compilation of annual report approved. Offer of Hon. L. B. Wombwell, State Commissioner of Agriculture, to publish annual report for 1894 at the expense of his office, accepted. Committee appointed to draft by-laws and amendments to the constitution, for the consideration of the Executive Committee, with a view to submitting the same to the Society for adoption.

At the meeting of December 26th, '94: President Dudley W. Adams delegated to represent the Society at the meeting of the American Pomological Society, Sacramento, Cal., January 16th, 1895. E. Bean, D. Greenleaf and Stephen Powers designated as Committee on Local Arrangements for annual meeting for 1895. Date for eighth annual meeting fixed for May 7th, 1895. Resolution passed providing that the annual memberships end with the 31st day of December of each calendar year.

At the meeting of February 5th, 1895: Appointment of C. F. A. Bielby as chairman Transportation Committee announced, vice G. P. Healy, resigned. Secretary authorized to employ stenograher and arrange for printing and necessary incidentals in connection with annual meeting. Conference held with Committee on Local Arrangements and Secretary Jacksonville Board of Trade to perfect arrangements for annual meeting.

At the meeting of May 7th, 1895: The report of Committee for Drafting Amendments and By-Laws to the Constitution was called up for consideration, and after considerable discussion, the following were agreed upon and ordered reported to the Society, with the recommendation that they be adopted:

AMENDMENTS TO CONSTITUTION AND BY-LAWS.

AMENDMENT TO ARTICLE 3.—That Article 3 be amended by omitting the office of

Corresponding Secretary and changing last sentence to read: "After the first election their term of office shall begin on the first day of January following their election."

AMENDMENT TO ARTICLE 5:—That Article 5 be amended by changing the last sentence to read: "The President, Secretary and Treasurer shall be, ex officio, advisory members of the Executive Committee."

BY-LAWS.

1st. The Society year shall be coextensive with the calendar year, and the annual dues of members shall be one dollar.

2d. All bills authorized by the Society, or its Executive Committee, for its legitimate expenses, shall be paid by the Secretary's draft on the Treasurer, O. K.'d by the President.

3d. The meetings of the Society shall be devoted only to horticultural topics from scientific and practical standpoints, and the presiding officer shall rule out of order all motions, resolutions and discussions tending to commit the Society to partisan politics or mercantile ventures.

LYMAN PHELPS, Chairman,
E. S. HUBBARD,
For Executive Committee.

[The amendments to the Constitution and By-Laws, as recommended by the Executive Committee, were unanimously passed. See "Minutes" on page 1, item 19, also "Constitution and By-Laws" on another page.]

FLORIDA FREEZES.

The Greater and Lesser Freezes in Florida for a Century and a Half.

BY GEORGE R. FAIRBANKS.

Paper prepared at the special request of the Society, and read by the author.

[SEE MINUTES ON PAGE 1, ITEM 13.]

[Mr. Fairbanks prefaced the reading of his paper by the following statement: "The paper I have prepared, I have made very largely statistical, in order that there might be put in the records of the Society some data that might be considered reliable as facts. I have not indulged in much theorizing or prophesying."]

A retrospect of the climatic conditions which have affected semi-tropical fruits within the last one hundred and twenty-five years cannot fail to possess a peculiar interest just now, when we are passing from under two of the worst freezes which ever occurred in Florida.

The earliest authentic record we have of severe cold weather is in the year 1766, just after the transfer of the Floridas to England.—[See foot note No. 1.]

The night of the 2d of January, 1766, John Bartram, the botanist, says, "was the fatal night that destroyed the lime, citron and banana trees in St. Augustine, many curious evergreens up the river that were near twenty years old and in a flourishing state, the young green shoots of the maple, elm and pavia, with many flowering plants and shrubs never before hurt."

Bartram, who was then camping on the St. Johns river above Volusia, says: "The morning of the 3d was a clear, cold morning, thermometer 26 degrees, wind, n. w. The ground was frozen an inch thick on

the banks." Bernard Romans, in his Natural History of Florida (1775), says: "On the 3d of January, 1766, a frost destroyed all the tropical productions in the country, except the oranges. The Spaniards called this a judgment on the place for having become the property of heretics, as they never had experienced the like."

In 1774 there was a snow storm which extended over most of Florida. The inhabitants long afterwards spoke of it as an extraordinary white rain.

In 1799 the temperature was very low, and on the 6th of April, 1828, a heavy frost was very destructive to vegetation. The temperature at Picolata was as low as 28 degrees.

The great freeze, *par excellence*, occurred in 1835, on the 7th of February, when the temperature went as low as 7 degrees above zero. John Lee Williams, writing in 1837, gives the following account of the great freeze of February, 1835:

"A severe northwest wind blew ten days in succession, but more violent for about three days. During this period the mercury was 7° below zero." (This is undoubtedly an error, and should read above zero instead of below.) "The St. Johns river was frozen several rods from the shore, and afforded the inhabitants a spectacle as new as it was distressing. All kinds of fruit were killed to the ground. Many of them never started again, even from the roots. The wild groves suffered equally with those cultivated, as far south as the 28°."

He further remarks, that in 1837 the wild orange groves south of Volusia and at New Smyrna were in full bearing, which shows that they were not much injured. In 1844 the writer saw very large, sweet orange trees on Drayton Island bearing fruit, which could not have been killed down in 1835.

There has been some question as to the exact date of the freeze of 1835. I think there is no doubt that it occurred on the night of the 7th and morning of the 8th of February, 1835. Paragraphs in Nile's Register, February, 1835, state that the mercury was one degree below zero at Baltimore, and one degree above zero at Raleigh, N. C., on the morning of the 8th of February, 1835. That month was excessively cold, the Chesapeake having been frozen so as to close navigation three times during that month. The mercury is reported to have been at eleven degrees above zero at the same period at Fort King, Fla., then an army post near the present Ocala.

Dr. Baldwin, of Jacksonville, an excellent authority, informed the Times-Union in 1886, that the date of the freeze in 1835 was the 8th of February, and the mercury stood at 8 degrees above zero; and that about 1857, the day not given, the temperature was down to 16 degrees. In 1857 the mercury fell to 26 degrees at Tampa, 29 at Ft. Pierce and 30 at Ft. Dallas, on the Miami. At Jacksonville the thermometer indicated, viz.:

January 16, 1857	16 degrees
December 28, 1872	27 degrees
January 19, 1873	24 degrees
December 28, 1875	28 degrees
December 3, 1876	24 degrees
December 28, 1878	27 degrees
January 7, 1879	25 degrees
December 30, 1880	19 degrees
January 6, 1884	21 degrees
January 12, 1886	15 degrees

At Sorrento, on January 12th, 1886, the thermometer indicated 19 degrees. [See Foot note No. 2.]

With the foregoing statistics before us

we are prepared to institute a comparison of the severe freezes we have had in Florida in one hundred and twenty-five years—at Jacksonville as a basing point.

1766—February 3, probably... 20 degrees
1835—February 8 ..... 8 degrees
1886—January 12 ..... 15 degrees
1894—December 29 ..... 14 degrees
1895—February 8 ..... 14 degrees

In 1766 the effects of the freeze were confined to loss of tropical plants, etc. That of 1835 destroyed all oranges, lemons, etc., north of the 28°. That of 1886 destroyed many young trees, and some old trees, but did not affect the crop of fruit in the following year in quantity, though it did in quality. The freezes of 1894-5 appear to have pretty generally killed down lemon trees, grape fruit and young budded stock and many large trees: but, according to present appearance, old bearing trees will fruit for part of a crop the coming year. The following table gives the comparative temperature in 1886, 1894 and 1895, at different points in Florida, so far as we have been able to obtain reliable data:

RECORD OF TEMPERATURE, OFFICIAL AND REPORTED, AT DATE OF FREEZES OF 1886, 1894 AND 1895.

	Jan. 12, 1886. Degrees.	Dec. 29, 1894. Degrees.	Feb. 8, 1895 Degrees.
Jacksonville	15	14	14
Lake City	—	17	15
Tallahassee	—	12	11
Pensacola	15	14	12
Fernandina	16	15	15
Green Cove Springs	—	14	13
St. Augustine	—	16	16
Federal Point	—	17	16
Palatka	17	17	?
Fruitland	16	16	—
DeLand	17	16	17
Eustis	18	17	16
Citra	—	13	16
Archer	—	13	15
Volusia	18	17	—
New Smyrna	—	17	17
Oak Hill	—	21	—
Ocala	18	19	16
Orange City	—	18	18
Sanford	21	18	18
Orlando	19	18	19
Plant City	—	19	21
Kissimmee	—	19	19
Brooksville	18	17	18
Tarpon Springs	—	19	22
Titusville	—	18	19
Rockledge	—	19	—
Manatee	—	22	23
Avon Park	—	21	23
Myers	—	—	30
Fort Meade	—	22	24
Jupiter	—	24	28
Key West	41	44	54
Minneola	—	20	—
Leesburg	21½	17½	16½
Sumterville	—	19	—
Waldo	—	16	—
Longwood	—	—	20
Daytona	—	—	15
Wildwood	—	—	16
Bartow	—	—	20
Palm Beach	—	—	30
Quincy	—	—	7
Tampa	—	19	22
Lake Helen	—	20	16
Merritt's Island	—	—	22
Umatilla	—	—	15
Tavares	—	—	16
Ormond	—	—	18
Welaka	—	16	—
Melbourne	—	22	—
Sanford	—	19	—
Seville	—	19	—

The conclusion to be drawn from past experience in Florida, is that orange growing in Florida is not any more precarious than agricultural pursuits elsewhere. That but once in one hundred and twenty-five years have all bearing trees been killed to the ground, which was in February, 1835. That the freezes which have produced more or less injury have, with two exceptions, occurred between the 20th of December and the 15th of January, at which season the trees are usually in a dormant condition and well prepared to withstand a very low temperature. The freeze of 1835, sixty years since, did not entirely destroy the trees, and a new growth from the roots came into bearing within six to eight years, while in 1886, the ensuing crop was, in fact, larger than the whole crop of that year. Lemon culture has always been regarded as precarious and can only be ventured upon in especially favorable and protected locations north of 28°.

Nursery stock and budded fruit not well matured are, of course, liable to be killed when the temperature goes as low as in the recent freeze.

The fruit on the trees will be hurt by cold whenever the temperature goes for several hours below 26°, sometimes only partially chilled and rendered lighter. or, as in the recent freeze, when the temperature was at some points as low as 14°, frozen solid and virtually destroyed, because no large amount of frozen fruits could ever be marketed to any advantage.

After the freeze of December 29th, 1894, the condition of the trees was generally dormant, for from three to four weeks, when sprouts began to appear on all the older trees, and it seemed probable that half a crop might be borne, if they met with no other disaster. By the 7th of February the sap was well up in the trees, grove owners were hopeful and commenced fertilizing and working their groves.

On the night of the 7th of February, just sixty years to a day from the great freeze of 1835, the mercury fell rapidly, with very little previous warning, and the trees being leafless and the sap having generally risen and stimulated new growth, were subjected to as low a temperature as on the 29th of December. The effect was not at first perceptible and the younger trees gave for a while some promise of revival, holding their color, but in the course of from four to six weeks, it became apparent that nearly all the lemon, tangerine and grape-fruit trees, and all trees under ten years of age, had perished to the ground. About April 1st, old bearing trees began to show signs of revival, and sprouts put out on the trunks and large limbs a short distance above the bud; and the promise now is that in the central portion of the orange district new heads will form during the present year and some fruit be borne in 1896. The young trees, as well as the older ones, are throwing out shoots from the root and will, no doubt, replace themselves in two or three years. Partial crops will be produced within two or three years on the least injured groves. In the lower portion of the peninsula, south of latitude 28°, it is thought there will be a crop the present year, which may amount to 250,000 boxes. [See Foot note No. 3.]

FOOT-NOTES BY THE AUTHOR.

[Made Subsequent to the Reading of the Paper.]

NOTE NO. 1.—Governor Glen, of South Carolina, in a pamphlet published in London in 1761, says that on the 7th of February, 1747, the temperature at Charleston was as low as 10°, at 8 o'clock in the morning, and had been lower during the night;

that all bearing orange trees were killed to the ground, and even an olive tree eighteen inches in diameter. The coincidence of the fatal date of February 7th will be noticed as marking also the great freezes of 1835 and 1895.

NOTE No. 2.—P. P. Bishop, in an address before the Fruit Growers' Convention, about 1872, said: "At Christmas, 1868, and again at Christmas, 1870, we had the two severest frosts that have been known in Florida since 1835. At each of these dates many young buds were ruined, many young seedlings frozen to the ground and much fruit destroyed."

NOTE No. 3.—The above estimate of 250,000 boxes is excessive; probably 100,000 will be nearer the mark.

AFTER THE GREAT FREEZE.

The Orange Groves, and How to Treat Them.

Paper prepared by H. S. WILLIAMS, of Rock Ledge, Brevard County, Chairman of the Standing Committee on Citrus Fruits, and read by the Secretary.

[SEE MINUTES ON PAGE 3, ITEM 23.]

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE FLORIDA STATE HORTICULTURAL SOCIETY: The situation that confronts your Committee on Citrus Fruits is a peculiar as well as a serious one. Instead of discussing the varieties best adapted to our various soils, our climate, and our markets, we find ourselves in the anomalous position of facing the problem—What shall we do to grow them, so as to have a crop of fruit to base a report upon; and what shall we do to bring our groves up to their normal condition in the least possible time?

Let me state at the outset, that while I am not pessimistic by any means, yet I am far from endorsing the optimistic idea put forth so often and so persistently in the columns of our agricultural press, that the freezes of December, '94, and of February, '95, "were blessings in disguise". There is no blessing about it to the individual or to the State. If the few—and we can almost count them on our finger-tips—whose groves escaped serious injury consider it a blessing to themselves, we pity them, for the few who can congratulate themselves if benefited by the misfortunes of the many deserve our sympathy. The two great freezes of the last winter combined, formed the most dire disaster that has ever befallen any State in our history. We class it, only on a larger scale, as we do the cyclones that sweep over the Northwest, the great freshets of midsummer that inundate the cultivated river bottoms, the fire that consumes uninsured property, or the equally disastrous hurricanes that have their birth in the West Indies and are so graphically described by the poet Cowper—

> "Wild tornadoes
> Destroying towns, plantations, meadows,
> Filling yonder sea with wrecks."

A recent letter in one of our Jacksonville dailies says: "The freeze was a blessing in disguise to us, for we are now shipping hundreds of crates of vegetables, and in a week or so we will be shipping thousands." Could the optimistic crank go farther than that? Speaking for myself, I would much rather ship a

fair crop of oranges, extending over a period of three months, coming in competition with the crop of the whole State, than a crop of vegetables that will last but three weeks and not half pay the expense of gathering.

Mr. President, let us face the situation without having to whistle—and whistle out of tune at that—to keep our courage up. The most serious situation that can possibly be imagined, confronts us. For myself, I am yet dazed when I look over my leafless groves, and mentally compare them with what they were in December last. If forty acres of the choicest varieties of oranges, nearly all up to eight years old, killed to the ground, all others as a rule killed back to the main trunk ; all lemons, mangoes, and sub-tropical fruits generally, killed root and branch ; pineapples badly injured —representing all told the hard labor of over twenty years—is a blessing, then I want none of it. One great drawback to our recovery is that no one is competent to give us advice, because no one has passed through such an experience before. It is a new situation ; consequently a most embarrassing one. If Mr. John Frost—let us speak of him with all due courtesy—had stopped his antics with his December fiasco, we would have borne it without murmuring ; but his February spree was the proverbial feather on the camel's back. We can only bring reason and common sense to our aid, and then take the chances. What I am doing, and what I propose to do, is this. First, however, let me describe the condition of my trees. From eight years old and upward, they are as a rule sending out shoots along the main body and on the main upright limbs from ten to fifteen feet high. All the lower lateral limbs are dead, or nearly so, up to the main trunk. With a keen, light ax, I am cutting off the limbs some six inches or so from the live wood, and the main tops at least a foot above the sprouts.

"Why not saw them off at once?" I am asked. For this reason, with the weight of the limbs removed, I can saw off the stumps just where I want them, without danger of splitting the live wood and without destroying too many sprouts. Speaking of sprouts, the query confronts us, Is it best to thin them out? In reply, I will state that I will wait until late in the season before deciding. It is the one chance of a lifetime to test the theory of "the survival of the fittest". But again, everyone has noticed that the top shoots are small and of a most feeble growth. I want a stout, healthy growth at the extremity, so as to heal over as far as possible. In my opinion, we do not as yet know how far down the main tops will die, nor will we know until the trees take a second growth. In June, many of the trees that are putting on a feeble growth now will die down to the roots.

Of our younger trees, where they are throwing out one or more vigorous shoots from the collar we are sawing off the dead stock, reducing the growth to one stalk, and coating the stump with coal tar. About 60 per cent. of my younger trees, from one to five years set, are throwing up strong suckers, and we propose budding them next season. I have no faith in the sprig grafting down at the collar, as has been advocated in the papers.

After the trees are fairly started, how shall we treat them? Already we are told some growers have fertilized heavily with what are called complete fertilizers. This, in our judgment, is a waste of time, as well as a waste of money. Let us reason from analogy. Our trees are in the condition of a very sick man. To carry out the comparison fully, we will say, like one who was very sick, partly recovered, then suffered a relapse, which has left him at death's door. As soon as the patient commenced to improve again and had a little appetite, would you feed him on beefsteak, boiled cabbage, and hot biscuit? Instead, how cautiously the careful nurse will tempt that appetite with the most delicate morsels most easily digested. Even so with our trees—let

us nurse them back to life and health in the most careful manner. Good rains will give them all the nourishment they want, in our reasonably fertile hammocks, for some months to come. We would not express an opinion as to what would be best for pine land groves. I shall give my trees from ten to fifteen pounds of pure, unleached hardwood ashes and hoe in, say some time in June.

Now for a few random thoughts. About the only blessing we can see in this case is the destruction of the scale and other insect pests that were preying on our trees. We greatly fear, however, that this benefit will miscarry, for there is great danger of re-introducing all the kinds destroyed, and many more even worse, by getting trees and budding-wood from California. We think our wisest policy is to wait, and depend on ourselves for nursery stock. The ordeal through which the trees have passed tells us very plainly which are the hardiest varieties with us. Hart's Late is one of the tenderest. Tangerines, Pineapple and Maltese are almost, if not equally, as tender. The boasted hardiness of the Satsuma proves a myth. My oldest grape-fruit are putting out shoots some ten feet high, but they lack color and vitality.

As was to be expected, the remarkable and unparalleled situation has called forth many prophesies as to the future orange crops of the State. We have seen the figures for the present year ranging from three hundred thousand up to half a million boxes. In my judgment, the crop will not exceed fifty thousand boxes. All the oranges produced will grow in three, or at the most in four, counties. If my own county ships a thousand boxes, she will exceed my expectations.

As one who has followed me can readily see, I am sadly demoralized over the situation, but I am not disheartened. Acting upon the belief that the experience of the last winter will not be repeated for many years to come, I shall replant and nurse my trees back to life and productiveness, if that is possible, for with me the citrus crop is the only money-making crop I can grow. I claim I have made a success of orange growing in the past, and there is an old saying that we can now take home with some degree of comfort, "What man has done, man may do".

THE ORANGE GROVES OF THE WEST COAST.

The Winter of 1894-95 and Its Effects.

Paper prepared by A. L. DUNCAN, of Dunedin, Hillsborough County, Member of the Standing Committee on Citrus Fruits, and read by the Secretary.

[SEE MINUTES ON PAGE 3, ITEM 23.]

MR. PRESIDENT, AND MEMBERS OF THE STATE HORTICULTURAL SOCIETY: The freezes of December 28th and 29th last injured our young lemon and grape-fruit groves seriously; also young orange trees, especially in low places. However, we estimated on February 1st that our crop of oranges for the next year would be about one-third of that for the past season. The freezes of February 8th and 9th found our trees full of sap, and as a rule leafless, and the damage was severe in the extreme. Our old sweet seedling trees have lost about two-thirds of their tops, and budded groves set out about ten years ago have been

cut back about three-fourths. Some bloom is now appearing in these groves, but nothing worthy of notice, excepting that we can say that all our groves, for next year or season, will not be altogether fruitless.

In March we began cutting off, at the ground, all trees killed below the bud, leaving all standing that we thought would grow above the stock. Since then many of the doubtful ones have died to the ground. In going through our groves recently, we have endeavored to determine whether those cut down in early March have shown new growth sooner than those not so cut off, but that have since died below the bud; but we can, however, arrive at no definite conclusion.

We have used as stocks sweet and sour orange, grape-fruit, and rough lemon. The sweet orange and grape-fruit stumps appear to send up new growth earliest and with greatest vigor, the sour orange being slowest of all.

The same variety of orange budded on all kinds of stocks seems to have suffered less on the sour orange—size and all other conditions being equal—though it is very certain that the top affects the hardiness of the stock to a remarkable degree. Of orange, lemon, lime, and grape-fruit on sour orange roots—same in all respects as to age, size, condition, exposure, etc.—the three last named were killed to the ground, stock and all; while the first named was seriously injured, but not killed below the bud. Of the same varieties of orange trees, ten years old, on sweet and sour orange stocks, in same grove, those on sweet stocks suffered least, because larger and more thrifty.

Young trees on all stocks suffered alike—that is, killed to the ground.

Speaking of our own groves of nearly two hundred acres, had we fertilized more freely from the first the trees would have been larger, would have paid expenses sooner, would have been less injured now, and we would have been better able to sustain the loss. In addition to the above thought, the most important as well as the most practical precautions that I can suggest for the protection of our groves from freezes such as those of the past winter are—to bud low; bank up well in the fall with dry soil; after rains, from December 1st to March, rake over or loosen the soil so banked up, that it may dry out quickly and thus prevent penetration of frost. These will save the base of buds, stock, and crown-roots from any freezes likely ever to visit Florida, and during the past winter such protection would have been worth millions upon millions to the citrus industry of our State.

Citrus fruit growing in Florida has suffered a most dreadful reverse. It is doubtful if any single industry, in any State, has ever sustained so great a loss, but it has not been destroyed, nor will it be. The Anglo-Saxon race has never accepted defeat in that spirit. The usual seasons will return, and oranges, lemons, limes and grape-fruit, matchless as to quality, in all the world, will be produced again in great abundance.

THE FREEZES OF 1894-'95, AND THEIR EFFECTS ON THE ORANGE INDUSTRY.

Discussion on the above subject occurred after the completion of the program during the first session, first day, and again during the morning session of the third day, as indicated in the report below, which gives both sections of this discussion.

[SEE MINUTES ON PAGE 1, ITEM 8.]

PRESIDENT ADAMS:—Our program for this evening (Tuesday, First Session), is completed, but we have some time left that can, perhaps, be utilized. Mr Phelps, have you any suggestion to offer as to the use we shall make of the remainder of the evening?

LYMAN PHELPS:—I would like to thank the Mayor, first of all, for his admirable address of welcome. He has put in a practical way what the press have failed to put in a practical way, as I look at it, and I would like to discuss now the topics he has brought before us. We will never have a more fitting time than to-night, when they are in the minds of the people. We have heard a very great deal in the press about the benefit this freeze was going to be to us. I would like to find some one that could say, "presto," and bring back again what has gone, for I do not think it is possible that a State can lose fifteen or eighteen millions of dollars, right out, and somebody not feel it. I do not think it is possible for so many millions of dollars to be taken out and the State not feel it for a long time. Still I don't believe to-day but that the State of Florida will raise the lemon and orange and lime and other citrus fruits for these great United States, and raise them better than any other country can raise them.

I suppose we are all pretty much in the same boat. I suppose that those having large interests have been hurt just as badly as those with small interests. I find we meet more on even ground to-night than the Horticultural Society ever has. None of us will know before August how badly we are hurt, and how badly the business of the State has suffered and is going to suffer in the months to come. I recollect the cold of December, 1876, when there was a three days' cold, in which the ice did not thaw on the north of my house, and that was followed by another three days' cold; and yet, in South Florida more of the orange trees died the following August than died in the winter—and yet it was not as severe a cold as this. I have had blotted out in one night ten years of hard work, in which I had thought I had some success. I believe in Florida and in Florida growing fruits. I have tried vegetables and melons, and am trying them now, what I can dispose of at home, but not much for the market; but I will say, I do not propose to throw away any work on my grove; I shall let nature do the most of the pruning till I see what nature is going to do, how much is going to be resuscitated by nature, and then things that are

worth helping I shall help, and things not worth helping I shall not spend any money or any time or any labor on. I have felt more of the dumps than I ever did in my life, more like keeping in my own little lot and watching and looking, than I feel like giving advice to anybody as to how to treat the frozen orange tree.

MR. ADAMS:—I suppose we will not have to look far to find other men who have frozen trees; perhaps they can tell us something they have done, or something they have omitted to do, or something they think should be done.

E. BEAN:—Mr. Chairman, I was reminded by Mr. Phelps' remarks of the freeze of 1876. I came into the State in the fall of 1875 for the purpose of making a business of buying oranges. The summer of 1876 I built a packing house and got ready for work. On the 5th of December, as Mr. Phelps says, there came that fearful freeze, lasting for three days, and every orange north of Lake George was frozen—at least I did not find any that were not. South of Lake George there were a few that were unhurt. Now there has been a repetition of that thing from that time down to this. There has been loss of crops, loss of trees, losses in every direction—and yet there has been prosperity notwithstanding those losses. I have in mind now the statement made to me but a few days ago, that in one instance where an outsider had put into a concern in the orange business $18,000, he had received in cash dividends $90,000 up to this time. That shows you that there can be some encouragement in growing oranges; that while we have met with disasters that are appalling, knocks the bottom out of all of us, yet at the same time the business has not been an unsuccessful business up to this time as compared with other lines of products and trade. There was nothing exceptional about the instance I mention. I know of others in the State who have done equally well. One gentleman told me that he was the representative of a stock company that divided 40 per cent. on the investment last year from their crop. The business itself is a good business. We have got to prepare for the contingencies that will come in.

Now I think this, that the horticulturists of Florida have tried, or, rather, a great many of them have tried to go too fast. I think if during their years of prosperity, they had salted down some of the results of the years—when they had a good year, saved some of it, instead of putting it into an enlargement of their acreage, or spending it in going to the World's Fair, or going North, or somewhere for the summer, that they could stand such a shock as this. The trouble is that they have regarded it as a bonanza, and that there was no end to it, and now Providence has taught them that there is danger; but I do not believe that the whole business is a wreck, by any means. I know of large groves in the State to-day, where 90 per cent. of the trees are putting out from the limbs or trunk. That means that there will be a crop within a year or so at the outside—an abundant crop. Others may not be so fortunate; but there will be oranges grown in Florida after we have all passed away, and it will be an interest and a large one. [Applause.]

D. D. CREWS:—I hail from DeSoto county, as some of you may know. Our trees are not killed so badly as a few others I have heard reports from. On many of our trees the limbs as large as my wrist are killed back, most of them; but they are putting on sprouts near the top and looking fresh and vigorous, growing vigorously

now, and some of them are blooming. Some of our orange growers went to work and sawed off the outer branches that were killed, while others are not doing so. For my part, I am of the opinion it is best not to saw them off. My argument was, the old limbs would serve for braces for the new sprouts until they took sufficient hold to stand alone. A little south of me the trees shed their leaves, but have lost no wood. I had some oranges from there a few days ago; they were as good as oranges ever are at this time of year, and the trees are putting on a nice crop this spring—at least, so I am told; I have not seen them, but so understand. However, that will never be much of an orange-growing country, because there is but a small area of land there that will successfully grow oranges—just little patches along the Caloosahatchie river and its tributaries. I find in my travels through my county that the trees are not so badly hurt—none killed to the ground. Even the grape fruit, only a few of the smallest ones, perhaps an inch in diameter just above the ground, are killed to the ground. Some few young grape fruit trees, perhaps four inches in diameter, were killed to the ground, but all the larger ones are putting out high up in the limbs, and putting on a vigorous growth. We never had an orange leaf fall off the tree from cold before; yes, I believe I did hear one man say some of his small trees shed some of their leaves once before from the cold. While I am very sorry for my less fortunate horticulturists, I would advise as many as want to grow oranges in Florida to try to get them a tract of land in DeSoto county—they will be more sure of success. In my travels to and from Jacksonville for a number of years, I have had a good many arguments on the subject, and have decided that if there is any successful orange country in Florida, it lies in DeSoto and Manatee counties. I understand that on the Manatee river orange trees were not so badly hurt.

A MEMBER:—How about Lee and Dade counties?

MR. CREWS:—Lee and Dade? The Caloosahatchie river runs through Lee—that is the county I have just been speaking of. Dade is no orange country and you can't grow oranges in Dade. It is a low—I don't know how to describe the country, what I have seen, but I would not give $1 for 400 acres of it. It is too poor to raise a disturbance on. [Laughter.] Our trees are just in the condition that I represent them, and next year we expect to have a pretty fair crop of oranges. While it is possible there may be a recurrence of this calamity I do not think it is hardly probable that it will come. It may come, but I hardly think so, for years yet, anyway.

I remember hearing old men say—my father was through all the Indian wars that have been in Florida since 1835—I heard him speak of it; as well as I remember, in 1835, there came a freeze, and it killed the maple trees; all the sour orange trees in the hammocks of Florida were killed to the ground. Of course, there were no orange groves in Florida at the time, and very few people living in the State; but soldiers were marching through the State hunting Indians, and he was one of them; and he spoke of the maples, large maples, being killed; I think it was in April. So, it is probable in every fifty or sixty years we may have a recurrence of this calamity. It may visit us again, but I hardly think that it will come soon, and we can grow a great many oranges before it will reach us again. But I can't let go the idea that it is better to grow on a smaller scale than a great many do, so that the loss would not be felt so badly.

My idea is for every man to have him a small orange grove, say 200 or 300 trees, and then endeavor to have land enough to make his crops outside of that; grow all that his family needs, such as corn, peas and potatoes. Of course, we do not expect to grow a large yield of corn per acre here, but we know almost every year we have nine months that we can grow crops of some kind, and sometimes we can grow certain crops all the year round. I don't see any need of anybody who tries, starving in Florida. We try to live independent of a grove; we have a small grove of 500 trees, the income of that grove will amount to considerable, and it is almost like something given to us; but I always felt it was a poor thing to lean entirely on the orange industry alone. It is true that there is a great deal of land in Florida that will successfully grow oranges that will not grow much other stuff. Where a man has that kind of land, I believe he had better quit and come down to DeSoto county. There is no better orange growing land in the State, and it is cheap. The little grove I have never cost me a farthing for fertilizing, nor for labor either. I did hire a few men to take out some stumps, and I believe I hired a man or two to take some timber off. Outside of that it never cost me a particle. I don't know of any men who have expended much money on their groves in that county. It is a good stock county. We do not have to buy any fertilizer.

I passed up from my place to Tampa a few days ago. Just after I got out of DeSoto county, I found a good many trees there killed to the ground. In the vicinity of Fort Meade, Bartow and Plant City, all through there, there are trees, almost entire groves, killed to the ground, and they did not show any signs of life. I have some trees in my grove that have the leaves on them to-day that they had last year; but these were only a few trees, and it was a little strange about it; they were on the northwest corner of the grove; they were on the highest land of any in the grove. A neighbor had a little grove adjoining, and after the first freeze I went over to his place. He lives on a place like a potato bin—a little, narrow hill—and he planted his grove on each side of his house. The trees were pretty badly hurt on the lower side, on the north and south side; but on the higher portion of the ridge, right about his house, the trees had lots of green leaves on. Those trees put on considerable bloom. So, I feel satisfied, all of us in DeSoto county will only lose one crop. Perhaps next year we will have only one-third of a crop; but we will have considerable fruit, it is safe to say, next year, unless some terrible calamity befalls us.

THOS. HIND:—I remember last year that our Mr. Healy and Mr. Carlton read to us numerous account sales they had from oranges sold. I think one was for $675 for a car-load; but the railroad you have in DeSoto county left them in debt about $75 or $100. I would sooner take my chances in Putnam than on your railroad.

T. S. JOHNSON, (of Sunnyside, Lake county):—The gentleman from DeSoto has told us about the trees not being killed. I think generally over the State, up this way especially, about one-half the trees are destroyed; if not in the root, they are dead from the top of the ground up, as I have seen.

I don't want to talk about these trees, but want to get in another thought. If half of our trees are dead, and we do not plant out any more, will we not be better off with the other half, if we take care of them? I claim the majority of the people in this

State never have cultivated and fertilized properly. They send inferior fruit to market, and you hear people say they are perfectly surprised to see Florida send such fruit to market, that it brings nothing hardly after taking out the freight and commission, etc.; the grower gets very little; so that if we would take better care of our groves, have less of them, and put our fruit up better, would we not be better off? I am inclined to think we would be.

If people plant more groves over the State, in ten, or twelve, or fifteen years, we will have oranges again, if we do not have another freeze; but at 25 or 50 cents per box on the trees, it will hardly pay to raise them. Had we not better look at this thing squarely? Instead of having fifty to one hundred acres, say we have twenty or twenty-five acres, and take good care of them, and in the end have more money than with a large grove and a big business.

H. E. ANDERSON:—I suppose there is hardly an orange grower in the State of Florida, that has a grove of his own, but what had groves to tend for other people that do not make their homes here. I should like to hear from others, if they have something to say about it, what their friends North are doing in this matter. Are they throwing up their groves, or what are they doing? I can say for myself, I had five groves taking care of them for my friends North, and out of the five three threw them up, would not care for them any more, under any circumstances. Now, I know all through my section of the country, there is quite a number of groves that are abandoned altogether—the non-resident owners have made up their minds they won't carry them any longer. That will work a great disadvantage to many, particularly under the present circumstances. There are lots of people to-day where I live that were working on small means, and while they were trying to raise a grove for themselves, they were really getting a living out of groves they were taking care of for somebody else. While this has been no doubt a great calamity, and I can't see anything like a blessing in it at the present time, there is no doubt but it will eventually be a blessing, because I am thoroughly satisfied at the rate we were growing oranges in Florida, in a few years we would not have been able to have gotten anything for them. I know of lots of oranges shipped from our place that brought nothing. But I am confident that there will be so many groves abandoned that those who do hold on will do well. This experience is going to teach our people how to live at home. Many have heretofore given their entire attention to orange growing, have not even taken time to plant a garden, cultivating in oranges every foot of soil they could get hold of. This year everybody has a garden, and everybody is living on home-grown products. I have the greatest faith in the world in Florida, always have had, and I have been in Florida for twenty years. I believe Florida is destined to be one of the greatest States in the Union, and, as I have already said, there is no question in my mind but that those who stick to their groves will come out all right.

[The foregoing discussion occurred at the close of the first session; the continuation of this discussion, which follows, took place at a subsequent session, namely, the morning session of the third day.]

[SEE MINUTES ON PAGE 3, ITEM 39.]

J. W. HARDING:—I would like to state that one of our most efficient growers has just returned from the Fort Myers region

and all down Southwestern Florida. I understand he brings rather an unfavorable report—nothing very encouraging from that region, where we have supposed there was a good deal saved.

D. D. CREWS:—I live not very far north of Lee county, and I have a great many reports from there from reliable sources, and a few days ago I ate oranges from there, nice and juicy. I would like a little correction to be made. I am reported in the Times-Union as saying that branches were killed as large as a man's arm. I said my arm, and my arm compared with your arm is a different thing. I mentioned in connection with my arm not to exceed 1¼ inches. I don't think you will find branches killed to exceed that size, and the branches extending from the trunk of the tree are larger than that and full of young sprouts, just crowded full, and our trees are showing up in good condition. I have been interested in the remarks of the other gentlemen of this Society, and am sorry that they have been more unfortunate than we in this direction. It places us with greater advantages in one light, but our higher transportation rates amount almost to prohibition, prohibiting us from marketing our crops when you, in North Florida, were marketing your crops. That is an unfortunate condition of ours that we cannot perhaps remedy, and I only find the transportation question put at the foot of the calendar at this session and the one preceding it. I think the transportation question is one of great importance to the farmers of Florida, whether we produce cotton, sugar, or what not. We want as low transportation rates as we can get, and we find throughout the United States great inequality in transportation rates.

E. O. PAINTER:—About two months ago I visited Lee county. When we arrived at Punta Gorda, around the hotel we found orange trees budding out in a grove and blossoms. At Ft. Myers many of the groves still have on last year's leaves. As we went up the river, the Caloosahatchie, proceeding northward, the further we got away from Myers, the worse the trees were; the smaller trees, just set last year, some were killed; a majority of the old groves were in good condition, were putting out new growth and blooming then. There is only a very small tract between Ft. Myers and the Gulf which seemed to be very little damaged from the cold, but in that belt there are very few oranges. I think, however, the groves all along the Caloosahatchie will produce good crops of fruit this year if properly taken care of.

J. W. KING:—As to the Myers section, I went down there immediately after the second freeze. At Punta Gorda I saw a few orange trees in the yard of the hotel that were perfectly green, but had no foliage—the branches were green, they had no foliage. At Myers I found trees that had hardly lost a leaf. Up the river and away from the Caloosahatchie, a mile and a half or two miles back on the north side of the river, you see signs of frost. The small trees I saw were killed to the ground; the old trees showed very little damage—in the upper branches there were some dead limbs. On the upper river the old trees are in good condition, they show but little loss; the small trees show some damage. Immediately in Myers the fruit remaining on the trees from last winter's crop is perfectly sound and solid. On the southwest of Myers, between Myers and the orange region on the south branch of the Caloosahatchie, what few orange trees there are, are without fruit; but there are very few.

RESUSCITATING THE ORANGE GROVES.

How the Frozen Trees Should be Treated.

Discussion on the above subject occurred after the completion of the program, during the first session, first day, and again during the morning session of the third day, as indicated in the report below, which gives both sections of this discussion in full.

[SEE MINUTES ON PAGE 1, ITEM 8.]

G. L. TABER (Tuesday evening, first session):—I would like to hear from our President what he intends to do with his orange grove.

PRESIDENT ADAMS:—I don't know what is best, but I know what I have done and shall do. The old, large trees—trees from ten inches to two feet in diameter—that are on sweet stocks, I shall do nothing with, but just wait until they show sufficient convalescence to take food, when I will feed them. When I got up on the morning of February 8th, and saw the mercury at 20 and the wind blowing a gale, I said to my folks, "That settles it; those trees are dead". I went to the telegraph office and sent to California for grafts. As soon as they arrived, I cut down (into the ground) all medium and small-sized trees—six inches in diameter or less—on sweet stocks, and all trees on lemon and sour orange stocks without regard to size, and inserted the grafts. With very few exceptions, all are growing. Some start slowly, but most of them are vigorous. Yesterday (May 6th) I measured the best one I could find; it was four feet and half an inch in height, and the biggest leaf on it was nine inches long. I am quite confident I did the best thing I could have done with those trees; but whether I have done the right thing by my big ones, in just letting them alone and allowing nature to work in its own way, I am not certain—but where I am uncertain which course to take, I always take the one that costs me least; and it has cost me less to let those old trees stand and await results, than to have cut them down. It would cost a pretty serious sum to cut down and clear away those old trees, that spread twenty-hve, thirty, and some over thirty feet. Cutting them down and disposing of them would be a pretty serious job; and then after it was done, if those trees and stumps sprout with any kind of vigor, as I hope they will, if the tops were gone, there would have to be another large expenditure for staking and tying up the sprouts to keep the wind from blowing them down. As for the old trunks and limbs standing there, they are not really handsome, nor ornamental; but if the borers and the weather will cut into them and wear them out in the course of a few years, they will work cheaper than the gentlemen from

Africa—and I am going to let them do the job.

LYMAN PHELPS :—Sometimes the borers do more than you want them to.

MR. ADAMS :—No, sir ; the dead wood borer has never done any harm to green wood for me. When the dead wood borer gets down to where the wood is worth anything, he has got as far as he is going—at least this is my experience. He will work down into the heart of the tree sometimes, and you may think that he is where he will do injury ; but in fact the heart of the tree is of no use in the world, except to help it stand up—it adds nothing to the vitality, vigor or health of the tree, only makes it, perhaps, a little stronger, but, all persons familiar with mechanics know that the hollow cylinder is almost as strong as the solid column.

[The foregoing discussion occurred at the close of the first session (first day); the continuation of this discussion, which follows, took place at a subsequent session, namely, at the morning session of the third day.]

[SEE MINUTES ON PAGE 3, ITEM 39.]

SECRETARY MANVILLE:—A number of the gentlemen in attendance desire to hear more about the condition of the orange groves in different parts of the State, and what is being done for the frozen trees. Therefore, I move that the regular order of exercises be suspended, and, setting aside one hour for the purpose, that the members present be invited, in five minute talks, to give the condition of the trees in their sections, and what they are doing for them.

MR. PHELPS :—I would like to add to that, that the President be requested to open the discussion personally. [Motion carried.]

A MEMBER :—I understand that at a previous session President Adams stated that he was not removing the tops of his large seedling trees, that had been killed by the freeze, and I would like to ask his reason for allowing the dead tops to remain standing.

MR. ADAMS :—Simply from the fact that when there are two courses to take, and I am not certain which is right, I always give my pocket-book the benefit of the doubt ; and in those cases where the trees are in such a condition that I am unable to determine what they require, I just wait—this is an easy thing to do, it is satisfactory, and is not an expensive luxury. In the present state of Florida's finances, that which is not expensive harmonizes best with existing conditions. So far as my old trees are concerned, I am just waiting to see what the result will be. If they show vitality enough to put out shoots, reasonably large and vigorous, and get foliage enough so they can assimilate food, I intend to feed them. As to my younger trees, trees four or five inches in diameter (and trees of all sizes on lemon and sour orange stocks): As I stated at a previous session, the next day after the February freeze I telegraphed to California for grafts, and I cut them down into the ground and grafted them, and they are now growing nicely, and before I get to be an old man I will have a bearing grove again. I put in Washington Navels, Ruby Bloods, Majorcas and Valencia Lates.

A MEMBER :—I would like to ask how you cut the trees down ?

MR. ADAMS :—The work was done with axes.

A MEMBER :—How far below the surface were the trees cut ?

MR. ADAMS :—From one to three inches below the surface. All were cut low enough to make sure perfectly sound wood was reached. We attempted at first to use a saw, but we could not cut them low enough without a good deal of trouble, and I got light (three and a half pound) axes. One man would cut a tree with an axe quicker than two with a saw. We dug away the soil around the tree and cut usually from one to three inches below the surface, and inserted the grafts between the bark and the wood. We put in some on old lemon stocks eighteen inches in diameter. You will notice when you cut off the tree that the stump is not round, it is irregular, and if you push down a scion at a point where the bark line is convex it will split the bark ; but if you select a place that is nearly flat, or slightly concave, the scion will take up the slack of the bark, as it were, and the bark on each side of the scion will not be raised from the wood, nor will the bark be split by the insertion of the scion.

MR. MANVILLE :—I see a good many statements in the papers, and I have heard them repeated here, about the "killing" of the orange trees by the cold of last winter. Now, I want to venture the opinion that no orange trees have been killed ; they have been cut down—the question is, How far down have they been cut ?—but, I don't believe there is a single tree in the State of Florida that is not sufficiently alive to sprout from some point if given a chance. I have a grove that has been severely cut by other freezes, and I have twice been through the experience of bringing the trees up from the ground. Adventitious eyes must form in the live wood before the trees can sprout and grow. Light and air are essential to the formation of such eyes. Where the trees are killed to the surface, or below, the earth must be removed so that eyes can form. But, I do not believe there is a tree in the State so badly injured by the cold of last winter that it will not sprout from the main stem or tap root if this is done. Where the collar or crown of the tree is killed, unless the earth is removed, the tree, very likely, may not sprout from the axis (or tap root) and in this case, if the tree sprouts at all, it will be from the main lateral, or brace roots, and, as these roots are no longer connected, the crown being killed, each sprout will be a separate tree, and a tree with roots all on one side at that. I am speaking of cases where the trees are killed very low, where the crown is killed and there is no live wood connecting the laterals and the main root or axis. In such cases, if you dispense with these large brace roots and open up the ground, so that light and air can get down to the live wood of the tap root, eyes will form, sprouts will put out from the main axis of the tree, and you will get a good tree, a much better tree than if you let the sprouts come from the lateral roots, in which case you will have a divided tree.

MR. ADAMS :—Speaking of divided trees, they are not ornamental, but they prove prolific. I had some trees that were killed down ; they did not sprout at all from the collar or main root but only from the laterals. I let these sprouts grow two or three years, and then budded them with Washington Navels, and when this freeze came I had a number of these little clusters of Washington Navels, and they were just loaded down with fruit ; they were not ornamental, but they were successful in producing large crops of fruit.

J. W. KING :—What to do for the large trees where the tops are entirely killed, that is a problem we can only judge of on general principles. What I have done is

simply to leave them alone. I don't know what else to do; and I think it is wise, when we don't know what to do, to let them alone. What I propose to do is simply to cultivate the ground, fertilize it, and take care of those trees that show a disposition to take care of themselves. I don't feel encouraged to plant another young grove. I have made up my mind to bud no more trees. I shall let the trees grow up as seedlings. I feel it is the safest plan. As to sawing off the trees: All those dead, clear down, I have decided to saw off at the ground, for the simple reason that it is easier to saw them before the sprouts come. I have decided to leave the dead wood on such trees as are alive in the branches, of which I have a good many. It is going to be expensive to cut this dead wood out, and I will leave it until after the storm season next fall; it will serve to support the sprouts which come out on the sides of the trees, which, after the storms are over, will be strong enough to support themselves. I don't propose to abandon my orange property. I propose to take as good care of it as I can and try and bring it back. Whether this can be done or not will depend largely upon the weather we have next winter; if we have mild weather I think it will be but a few years before our groves are restored.

F. G. SAMPSON:—What I have done has been to cut off the large trees at the ground, and feed them—that is all I have done.

W. H. H. HOLDRIDGE:—I would like to ask Mr. Sampson what condition the trees are in; what proportion have sprouted?

MR. SAMPSON:—I don't think there is any question about the life of the roots.

G. L. TABER:—Mr. King stated that he would leave the dead tops on some of his trees until after the fall storms, to support the sprouts. I would like to ask Mr. King how he proposes to get rid of the dead wood after the sprouts have grown for that length of time?

MR. KING:—I would have to sacrifice some of the sprouts, of course, and make a slanting cut. This is one of the problems we will have to solve when we get to them.

MR. SAMPSON:—I think you will have to make your choice right now, either to let the dead wood alone until it rots off, or take it off now before the trees sprout.

EDWARD WINTER:—A few days ago, I heard the remark made that in 1886 the trees were frozen about as bad as they were this year, and that where the tops were left the dead wood still remained. I would like to ask if anyone knows of dead wood remaining on a tree that was frozen in 1886?

W. S. HART:—I fully agree with Messrs. Taber and Sampson, in regard to the necessity of cutting away the dead tops now, if it has not already been done. I don't see how it can be done properly later on without sacrificing much of the new growth, and we need to preserve every inch of leaf surface we can get on sound wood. Many of us have been through freezes before, and in cutting back our trees now, we see signs of the effects of former cold spells. I have cut off limbs and trunks as large as my arm, the wood of which, for a length of some feet, was dead and dry-rotting, except a thin film on the outside, that gave it the appearance of sound wood, except that the small branches from it were weak and sickly looking. This kind of wood is only an injury. If you leave the dead tops, there will be a good deal of it. Narrow strips of live wood up the sides of limbs will make growth that you will dislike to cut away, but the wood made on such limbs will cover rottenness. I want as little of this kind as possible in my trees.

I prefer to cut back to sound wood and have the strength of the tree go into a few strong, healthy sprouts. But, if the tops are left on, how are you to cut the dead wood away when many sprouts are crowding about the line that divides the sound from the worthless wood, so that you can get neither saw nor ax to it without destroying much of the new and valuable growth? Or, how can you haul the tops out, or burn them, without injuring the new wood? I thought I knew pretty well what a tree would do after serious injury by freezing. And if it had been a single freeze that had cut the trees back this time, I think I should have little difficulty in getting them back into profitable bearing within a reasonable length of time. But the conditions of the injury the past winter were new to me. The first freeze cut the leaves off and forced out an early growth, the second freeze hit them while in lush growth, but without leaves sufficiently developed to shade any part of the tree. The result was a shock to the whole plant, root and branch—"nervous prostration", as friend Bacon calls it. I felt very uncertain as to the result, but gave the treatment I proposed to follow in the Farmer and Fruit Grower—not claiming to know it all, however. Where the injury was not too great, my plan worked well, and the trees will soon be in good shape again. But, in most cases, the prostration was such as to cause the dead line to crawl gradually down into what was, at the time of cutting, supposed to be sound wood, and more cutting will have to be done later. Some, I fear, will never recover so as to make valuable trees. After finding the trees still dying back I did most of my cutting with a thin, sharp axe. As soon as I can determine where to cut to take the dead wood out finally, I shall go at them again, and think I can do better work, and will have less of it than if I had done no cutting before.

W. A. COOPER:—I represent 220 acres of grove, in which there are about 20,000 trees—about 5,000 four years old, 10,000 eight years old, and 5,000 seedlings, said to be twenty five years old. The first freeze kind of scared us a little bit; the second freeze did the work, and I have sawed off 10,000 buds close to the ground. I made a mixture, by stirring tar into hot lard, in the proportion of one gallon of tar to one pound of lard, and I spread this mixture on the cut surfaces and then covered them with sand. I removed the earth from around the trees, exposing the tap root for six or eight inches, and I don't think there is a single tree that is not coming. A thousand or more are coming from the tap root. Larger buds, eight years old, are alive from one inch to eight feet above the ground and are growing nicely. I have cut off my seedlings, making a slanting cut, and fertilized them. I have kept my cultivator at work ever since, and to-day on those old seedlings there is growth three feet long. I picked quite a little bunch of bloom the other day from these same trees. I am like the boy after the squirrel—got to have it—and I think all the trees will sprout and grow.

A MEMBER:—How high from the ground did you cut the seedlings?

MR. COOPER:—It was not necessary to cut them back further than I would ordinarily cut back such trees for resetting. Getting rid of the tops was a fearful job. We burned the brush in small fires in the grove, scattering the ashes over the ground. I shall support the sprouts by tying them to stakes. I have already bought 5,000 stakes, one and one-half inches square; these I shall cut into different lengths, carboline the ends, drive them down and

tie the sprouts to them. On the whole, I feel very much encouraged over the outlook.

H. B. STEVENS :—Ours is a natural grove, like Mr. Sampson's. The trees are very thick and irregular, and owing to the fact that we have two railroads passing our groves, we have to exercise great care to prevent fires, having had as many as fifteen set in one day by the trains. So we have adopted the plan of leaving the tops on the trees, only removing the side branches up to a point a little above the highest sprout. Then we remove the dead bark and cut down to the live wood on the trunk up as high as the sprouts are vigorous and cover with pitch to prevent any further decay. Ours are budded trees and many are sprouting as high as fifteen feet from the ground. We find that the trees from which we cut all the top off are not doing as well as those on which we have left the tops.

H. G. HASTINGS :—In our section, various plans are being pursued, each grower doing as he thinks best. Some of the trees are alive up three or four feet, some even higher, but the majority will have to be cut close to the ground. A good deal of budding (and grafting) in the root has been done, the most of it recently. So far as can now be seen it is successful; a good many of the buds set in the younger trees are sprouting. I notice where the trees have been budded the strength of the tree seems to go to pushing the bud rather than the sprouts from the stock—a decided advantage. Our people are going right along with their groves, and are determined to have oranges again as soon as possible. My observation leads me to agree with Mr. Manville in the opinion that none of the trees are killed outright—the roots are alive, at all events. I think sprouting is being hastened and increased by removing the earth from the roots, especially on our high pine soils, which are apt to become hard and cake about the collar.

G. S. HARDEE :—Mr. President, I came here as a student—to learn, not to speak, the two blizzards of last winter being a new experience to me and my people. It is true, we sustained some damage in 1886. But not to compare with the late disasters, Since the last blizzard, I have been seeking all the information I could get, from those who have had experience with killed-down trees. I will state to you briefly what I have done. Monday after the blizzard, I told my young man to hitch up the horses and harrow the old grove, on which I had finished spreading a carload of wood ashes on February 7th. The young man being contentious, and not wanting me to make work for him that would be of no benefit to me, remarked: "I believe it will be time thrown away; those trees are dead." I told him to give them, if possible, the best working they had ever had; that they were entitled to a decent burial for the good they had done. The growth on this grove started a week earlier than some other trees in the neighborhood which were not cultivated so soon after the freeze, and that growth is strong and vigorous. Many of my trees have put out twenty-five feet up. The main upright branches have put out a vigorous growth, but those extending at a right angle from the tree—the laterals—are killed. The tops of my old trees I have not cut off. When I get my crop laid by, I expect to prune, but I shall go at it cautiously. The cultivation that I have given them has, I think, done great good. I had about forty acres of young trees killed to the ground, ranging from ten years old down to one. It occurred to me before I could get out-

side information, that it was necessary to remove the earth from all trees killed down to the ground. All trees from which I removed the earth, exposing the crown roots, immediately after the blizzard, have put out vigorous sprouts, and by the 1st of June will be large enough to bud. In order to get the plow close up to those killed-down trees, I cut the tops off, leaving the stems standing from two to two and a half feet high to train the young growth on—this is in the young grove referred to. I have made a crop on the ground between these trees, and I believe the cultivation those killed-down trees have received in this way has been of great benefit. In conclusion: We have to admit that the orange industry has met with a great disaster, but I believe it will be a temporary set-back only, to those who have taken hold with energy and determination to rebui'd.

J. B. ANDERSON:—I think the methods of treating the trees are about as varied in Putnam as in any county in the State. As each grower is acting upon his own ideas, is doing about as he thinks best. In our own grove, we went for the trees first that we thought were going to do the best for us—our old seedlings. Some of these we found in good life from the ground up to a height of fifteen feet—they varied from four to fifteen feet—and instead of cutting into the live wood, not wanting to do any harm, and still wanting to get rid of the superfluous top, that we knew was of no use to the tree, we left from four to six inches of wood that we knew was dead. Where there was life up one side and where it was half or more dead, we counted that as dead and cut down to where we were sure it was more than half alive, and left as much live wood as we could for the purpose of pumping sap. We expect to have to cut again, but will do no more until we know just how far they are going to die back. We have a grove on the river that is in much better condition. We have about 600 budded trees in that grove, and probably 400 of them are good from four to eighteen feet high; with branches left an inch in diameter and larger, so that next year we expect to get some fruit from these trees. But a small portion of our trees, however, have escaped to this extent. We have one tree that is probably three inches through, budded on sour stock, that is alive eight feet high, and has bloom and young oranges on it now, and this in Putnam county. As to our trees that have not started, and they are very largely in the majority: I went through a 20-acre grove on Monday (last) and could find, out of 2,200 trees, only five that had started. These trees are planted high, so that the brace roots are somewhat exposed, and these brace roots are all dead. I had concluded that the trees in this grove were entirely dead, but I am encouraged by Mr. Manville's statement that there are no dead trees in the State, and I intend to follow Mr. Adam's plan, of cutting off below the surface, with those trees. Some, in our place, cut their trees earlier than we did, and cut into the green wood, as they supposed, thinking that they would start from that point; but I think a large proportion of those trees have died back from a few inches to a foot since they were cut, although the cuts were all covered with coal tar. The fear of the trees dying back in this way, was the reason we did not cut into the live wood.

THE BEST VARIETIES OF ORANGES FOR GENERAL PLANTING.

The discussion given below took place, under suspension of the regular order, during the morning session of the third day.

[SEE MINUTES ON PAGE 4 ITEM 45.]

SECRETARY MANVILLE:—In our discussion this morning, on the condition of the orange trees, and the best method of resuscitating them, we failed to take up the subject of varieties. I move that the regular order be suspended, and that thirty minutes be given to the consideration of varieties of oranges. (Carried.)

MR. MANVILLE:—I would like to hear from Mr. Warner.

S. C. WARNER:—I am not prepared to give an opinion, especially as to new varieties. Those who have been acting as judges of fruit for years could give us some valuable hints.

E. S. HUBBARD:—The question of varieties is a pretty wide subject to take hold of. In other fruits, apples for instance, the question of varieties has been by long experience settled down to the growing of only a few standard varieties. In the culture of oranges, in Florida, we have hardly reached that stage, as what we have done has been, comparatively speaking, largely experimental.

In early varieties of oranges, I know of no standard, all-around sort. We have a number of early varieties, but none that fill the requirements satisfactorily. Several of the Mandarin tribe, in special localities, are giving good results; in other sections, they may not make a good growth, or the size of the fruit is too small. The Satsuma colors and ripens very early in many localities, but the tree is a weak grower. The Tangerona has been experimented with somewhat, but hardly enough to recommend this variety for general cultivation. The Yellow Mandarin in some soils, ripens early, being colored and sweet enough to ship, by the 1st of November. Throughout the orange belt generally, the Red Tangerine is probably the most satisfactory of the earlier ripening class of Mandarin oranges; it can be shipped for the Christmas market. Among the round oranges, Centennial, Parson Brown and Nonpareil are the most satisfactory of the early varieties; they have sufficient acid to make them palatable, and are sweet enough to eat when colored enough for shipping.

For mid-season, the Jaffa may be considered the stand-by. There is quite a long list of mid season varieties that have little advantage over each other, such as Ruby, Knickerbocker and Amory among the bloods, and Prolific and Paper Rind among the St. Michaels.

Among the late oranges, I know of no superior to Hart's Late; the tree, in my experience, stood the last cold, as well, or better, than any other variety. The Valencia Late is also desirable.

LYMAN PHELPS:—I have nothing to add to what my friend has said. I approve everything in his very judicious statement. There are many new oranges which I think in time will prove satisfactory and desirable, but until I have heard from them for

years, and their good qualities are well determined, I do not recommend them to this Society. There is one new variety down at Fort Myers, which originally came from South America, which I think is quite the equal of Hart's Late; it is ready to ship a little earlier, and it is of a little finer texture. I would add this variety to the list of desirable late oranges; it has no name, and it has been proposed that the Executive Committee of this Society name it. The Valencia Late I consider a most superior orange; and taking everything into account, I prefer it to any of the fully-tested late varieties. The Malta varieties, all of them, will always pay; with one exception—the variety known as Gary's Mediterranean Sweet, which I do not recommend—I would say, cultivate the Malta varieties.

H. B. STEVENS:—In our section we prize the Pineapple orange very highly; it is a heavy, smooth fruit, a good bearer, a good shipper, and comes into bearing early—that is to say, the trees bear young—it ripens in mid-season. For an all-around orange we like it best.

MR. MANVILLE:—I remember seeing a foot-note by the Pomologist of the Agricultural Department, at Washington, referring to the Pineapple orange as a shy bearer, and I would like to ask Mr. Stevens as to its bearing qualities.

MR. STEVENS:—It bears the best of anything we have. The first tree of this variety that ever bore is in my vicinity, and when the bud was eight months old, it bore two oranges. We have thirty acres planted in this variety; the trees when set out were two-year-old buds, the first of them being planted in 1889. I don't remember what the yield was the first year or two, but last year we shipped 1,700 boxes from this thirty acres, and we find that this part of our Citra grove pays us better than any grove we have.

H. E. ANDERSON:—I find the Pineapple a very profitable variety, and often wish I had more of them; with me they are a very rapid grower. The Nonpareil, which Mr. Hubbard has referred to, I like very much; it makes a large tree and is very prolific. And I am very much in favor of Hart's Late, as I always get a big price for this variety.

J. B. ANDERSON:—I am inclined to think that Mr. Stevens and his neighbors have a monopoly of the Pineapple orange. The aroma and other distinctive qualities, that are developed to such a marked degree upon the soil of the Citra district, are not, in my experience, developed to anything like this extent elsewhere. We have the Pineapple variety upon both pine and hammock land, and when the fruit is ripe, no one can tell that they are a distinctive variety. On the other hand the Pineapple orange from Orange Lake, in season, and when ripe, has a peculiar pineapple flavor, and when placed alongside of ordinary oranges, the fruit is readily distinguishable by its aroma, as well as its appearance. I have concluded, therefore, that the Pineapple orange, as known in market, by its distinctive qualities, will remain the exclusive product of the Citra district.

[A number of members demurred from Mr. Anderson's conclusion, maintaining that the peculiar and desirable characteristics of the Pineapple orange were more inherent in the variety, and less attributable to the effect of soil than he contended.]

MR. PHELPS:—I would like to bear testimony to the fact that soil and air play an important part in making fruit. Atmospheric conditions are as important to fruit production as to the handling of tobacco. The effect of climate in making cigars is

well known. A cigar is made in the climate of Tampa that cannot be made in any other part of the State. These conditions affect our plants as they do the tobacco. There is a flavor about an orange grown in a particular locality, that you do not find elsewhere. Men who look into these things are finding this out. I agree with Mr. Anderson, that Orange Lake has a monopoly of the Pineapple orange.

W. S. HART:—I would like a little more information about Boone's Early. I have been given the impression that the tree was a poor grower. I should like to hear from those who have had experience as to this.

W. H. H. HOLDRIDGE:—I have a number of Boone's Early trees, and find them very strong growers. At one year from the planting several of my trees bore, but did not sustain their character for earliness in that first bearing; they were not fit to eat early and did not ripen until mid-season.

MR. HUBBARD:—The specimens of this variety which I saw at Sanford some years ago, at the time it was named by the Executive Committee, gave evidence of being a strong hybrid with the grape fruit. The character of the fruit was quite diverse; most of the specimens were light colored, with calyx quite distinct. Some of them resembled the Maltas quite closely. Some of them had hardly any seeds and were of fine texture, but others were coarse and quite seedy. The fruit, as examined at that time, did not seem to be thoroughly established. I think it would take culture and selection to establish the seedless and early sweetening type of the fruit, before the variety would become valuable. The fact that the fruit on Mr. Holdridge's young trees was not early was not significant; many early oranges, when first budded, and when the tree is growing vigorously, will be coarse and acid; they won't show very early ripening qualities until the tree has got size and is bearing heavily, but when large enough to bear several boxes of fruit will be of ordinary size.

MR. PHELPS:—At the time the examination was made, to which Mr. Hubbard has referred, I agreed with him that the variety was not well established, and I have not changed my opinion. I got buds then and have the trees growing on my place.

THE LESSONS OF THE FREEZE.

The Single or Divided Stem, Crown Grafting, Etc.

The discussion given below occurred during the afternoon session of the second day, immediately following and supplementary to Prof. Webber's report on the year's work "At the Sub-Tropical Laboratory", q. v.

[SEE MINUTES ON PAGE 3, ITEM 28]

PROF. H. J. WEBBER:—In regard to the effect of the freeze on the trees, which Mr. Bacon terms a disease and calls "nervous prostration," we have been studying and making numerous observations. Experiments have been inaugurated in several places to test the various methods which appear most promising. We hope to bring together the results of these experiments and to collect such information as it is possible for us to obtain in regard to the best methods of treating frozen

trees. One point which it is very desirable to consider is the union between stock and bud. If this can be put below the ground without serious injury to the tree, it would surely be very desirable, as in this case we could surely save the buds in any freeze, and if growers were cautious, they could bank up the trees in the early winter at a slight expense, and thus save a considerable portion of the tree trunks. On soils which are subject to the foot-rot, budding or grafting below the surface might be found injurious. I should like to have the testimony and opinion of all growers on this and related subjects.

Early after the second freeze I started a number of experiments in crown budding in stocks ranging in size from one inch to four inches in diameter. The scions used were obtained through the kindness of Mr. Burgess, of California. In almost every case these grafts have taken and are growing nicely. I see no reason why this process of propagation should not be largely used in cases like these freezes. I have also grafted a number of young nursery trees, some three years old, cutting them off below the surface of the ground, and putting on the grafts by the tongue graft, cleft graft and saddle graft methods. Fully ninety per cent. of these grafts have pushed, and have sprouts on them from one to three inches long. There is a general prejudice existing among orange growers against grafting as a method of propagation. I have, however, been unable to find many growers who have actually tried grafting. I would urge any one possessing information in regard to grafting the orange, to give us the benefit of their experience.

Another point, which seems to me very important, was first called to my attention by Mr. J. A. Barnes, of Citra. It was noticed that trees of the same age, having a single trunk, were much less injured by the cold than those trees which had been allowed to grow up with several main trunks. I have been observing this in many groves, and it seems to me very desirable for us, when possible, to train the trees so that a single main trunk is formed up as high as can be done and still make a good shaped tree. In this way a much larger trunk can be saved in case of a severe treeze. These freezes, we can rest assured, are liable to occur at short intervals, and is it not best to prepare for them? I mention this point largely to bring it to the attention of growers, so that they may make further observations, and be able, later, to give an opinion in regard to it. It is our duty as horticulturists, to obtain all information we can from this freeze, and prepare ourselves, so that the next freeze will not catch us as it has this time, without any experience or guide to determine our action.

PRESIDENT ADAMS:—There is no mistake that the single trunk has stood the freeze better than the divided.

S. G. MILLER:—I have been somewhat interested in the discussion that has just been going on, in regard to the different stalks. There are some other points that come up in my mind I would like to raise just now, if in order, as in regard to the single stalk or divided stalk. My observation in a good many groves is, that the single stalk, where solid, has stood the freeze better than the divided stalk. One question I would like to raise here is, where they have not sprouted at all, where they have been cut off, perhaps, within an inch of the ground, or down to an inch under the ground, what should one do to make them sprout? In my grove scarcely any of those trees show any indication of sprouting. It has thus become a question,

LEGISLATION AGAINST FRUIT PESTS.

[SEE MINUTES ON PAGES 2 AND 4, ITEMS 17 AND 54.]

At the Society's Annual Meeting for 1894, Prof. H. J. Webber, Prof. P. H. Rolfs and J. T. Stubbs were appointed a committee to investigate and report upon Legislation Designed to Prevent the Introduction of Diseases and Insects. When this topic was reached in the programme of the Annual Meetingof 1895, in lieu of a report, Prof. Webber made a statement in regard to legislation then pending on the subject (the Legislature being in session at the time of the Society's meeting). He said that as a bill had been introduced into the Legislature, designed to prevent the introduction and dissemination of diseases and insect enemies, and as there was possibility of its passage before the Society met, he and Prof. Rolfs had gone to Tallahassee, in order to secure the incorporation into any measure of the kind such features as seemed essential. That they had found the bill, which had been introduced, deficient in some particulars, and had succeeded in having it modified, to some extent, but not as much as could be wished, in a substitute for the original bill. After some discussion, the matter was laid over, awaiting the arrival of Prof. Rolfs.

During the evening session of the third day, the subject was again taken up, Prof. Rolfs being present, and the subject was discussed at length. The general sentiment seemed to be that the bill could be still further modified, on the lines indicated by Professors Webber and Rolfs—to include fungus, as well as other diseases (fungus diseases not being included in the bill)—to reduce the severity of the penalties provided—and, especially, to strike the provisions for county boards of inspection and local control, and to vest the execution of the law in a State Board.

The whole matter was finally referred to President Adams, as a committee of one, with the request that he proceed to Tallahassee and lay the views of the Society before the Legislature—which he did; but the Legislature adjourned without taking any action on this subject.

TROPICAL FRUITS ON THE EAST COAST.

Paper prepared and read by THOS. E. RICHARDS, of Eden, Brevard County, Chairman of the Standing Committee on Tropical Fruits.

[SEE MINUTES ON PAGE 3, ITEM 29.]

MR. PRESIDENT AND FELLOW-MEMBERS:—I will try and give you, as well as I can, a synopsis of the condition and prospect of tropical fruit culture in our section of the State, and the desirability and probability of the continuance of the growth of these fruits in this sub-tropical region.

I have been growing pineapples, limes, mangoes, sapodillas, alligator pears, sugar apples, and some others of the tropical

fruits. Now, as to the adaptability of our soil and climate, I would say that during the past fifteen years, I have surely made a success of these fruits, as much so as they have made a success in the growth of wheat in Wisconsin, or of the semi-tropical fruits, the orange and lemon, in the more northern sections of Florida. For fifteen years I had been growing these fruits successfully, and I had come to believe that Florida, or rather the south end of the State, was just across—just a little to the southward of the frost line.

Well, now, my fellow fruit growers, when one has been following a success fifteen years, don't you think he has a right to believe that he has a success? Well, that was my case. Every tropical plant I planted grew and thrived. I had some acres in pineapples, and never did I lose any fruits or plants by cold. I had a block or two that were looking very good, from which I had gathered eleven crops. Before the December freeze the field of pines was looking better than it did five years before, and when asked how long, or how many years pines would fruit before they should be replanted, I had the same answer for all, viz.: I do not know; I have not been in the business long enough to find out. Now, I shall say, until killed by a freeze. All the tropical plants are cut dead to the ground. My cocoanuts were cut so that there was not a green leaf on them. I took a saw and cut them off below where they froze, and I think I saved them by so doing; they are growing from two feet or less; I will lose none but a few that I did not cut enough. The pineapples that were set out the summer of '94 are all alive and growing. The plants that fruited the first time in '94 are all making good, healthy suckers, and will fruit next year. Where our plants were covered, they are doing well; many show no signs of the cold and are full of fruit. We are taking some comfort in the thought or hope that the little parasite we call the Red Spider (I don't know where it got its name, as it looks more like a Minnie rifle ball, and where it strikes has about the same effect, that is, it kills where it hits); we are taking some comfort in the hope that this little enemy has been destroyed by the cold; we are not sure of it, but we are trying to make ourselves think so. We are in hopes, down our way, that after the orange groves have been taken care of, and the white fly and other enemies of the citrus have been destroyed, that you will lend the experts to our people to try and exterminate the pests that trouble us.

Brother Horticulturists, it is a good thing that there is such a conglomeration of men with brains, men with nerve, men with energy, from every State in the Union, and, I might say, from every nation on earth, here, working in unison and harmony. There is no insect enemy that can overcome us; we are here in conference to-day, united, striving to work out our salvation with fear and trembling; and, for my part, I feel that there will not be so much trembling when we go home as there was when we left. Here is where the feeble knees are strengthened. If we say we will, we will!

DISCUSSION.

(The subjoined discussion followed the reading of Mr. Richards' paper.)

PROF. H. J. WEBBER:—Quite a number of those present are, doubtless, more or less interested in pineapples. I should like, myself, to get some information as to pineapple diseases, particularly as to a disease called spike. I understand some growers attribute it to the Red Spider (which is not a spider at all, by the way,

but a little mite of the spider tribe), and others to a worm that is found in the plant. Now, I should like to have an opinion from the pineapple growers as to the cause of this serious disease.

MR. RICHARDS:—I have failed to find a spiked plant that did not have worms in it, and have failed to find a healthy plant with the worms in it. From carelessness in selecting slips to plant, spiked plants are often set among the others, and they are spiked from the root up and grow for years, never fruiting, and as those spiked plants hold water better than the other plants, the worms live in them through the dry spells, and continue gradually to spread over the field. I have failed to find any other cause for spiking, except this worm (the Red Spider is not found in the spiked plant), consequently I believe the worm causes the spike.

TROPICAL FRUITS.

The Past, Present and Future of Tropical Fruit Culture in Florida.

Paper prepared and read by O. R. Thacher, of Avon Park, DeSoto county, member of the Standing Committee on Tropical Fruits.

[SEE MINUTES ON PAGE 3, ITEM 34.]

MR. PRESIDENT AND MEMBERS OF THE STATE HORTICULTURAL SOCIETY:—Having had but little experience in the culture of purely tropical fruits, and not much opportunity for personal observation of them, I am largely indebted for much of this report to Mr. H. G. Burnet, of Avon Park, who for the past thirteen years has been a close observer of tropical fruits, and their culture on the Lower Gulf coast and the principal keys, and an enthusiastic and practical cultivator of this class of fruits. Possessing a fund of information along this line, he kindly consented to permit me to avail myself of it in the following paper:

THE PAST.

It is not purposed to give a history of the culture of tropical fruits in Florida, but simply a short review of what has been done in this line in late years. First in importance is the pineapple, justly termed the "Queen of Fruits." Beginning with the year 1860, the culture of this delicious fruit has grown to large proportions, it being impossible to give the acreage at the present time. From the humble start on the lower keys, the "patches" have spread, until every homesteader on Biscayne Bay, Lake Worth, and the Lower Indian river is aiming at forty, eighty or more acres of pines. Catching the contagion, people living inland, among the citrus groves of Orange county, and amid the lovely lakes and rolling hills of Polk and DeSoto counties, have planted hundreds of thousands of slips and suckers, and find that they can grow them fully as profitably as our friends on the Indian river, if not more so, because of cheaper land that is more cheaply cleared, and withal perfectly adapted to the production of as fine fruit as can be grown anywhere in the State. Our method is to clear the land thoroughly of all trees, stumps and roots, harrow and rake it until it is level and mellow as a garden plot. As to distance apart, methods differ. Some plant

3x3 feet, some 2x2 feet, and some 22x22 inches, leaving suitable paths, at varying distances, so that from 6,000 to 12,000 are planted to the acre. The writer is inclined to believe that the larger number is preferable, if properly fertilized. We believe that heavy fertilizing pays.

There are also considerable plantations on the west coast of Caximbas and Marco.

Which shall we rank next in importance to the "Queen?" Shall it be the luscious mango, the toothsome guava, or the appetizing banana, whose healthful, nutritious virtues our Dago friends are never tired of narrating. The mango? Who is there that has ever learned to eat this healthful fruit, but has become almost passionately fond of it? The mango is one of the easiest fruits to grow—barring frosts—and as it is almost always grown from seed, a great many variations have occurred, some of which are a great improvement over the mango ordinarily found in Florida, as, for instance,. the Alec. Ball Mango of the Lower Indian river, the fruit of which from the parent tree has sold for an average of $150 each year for three years past. Some very excellent seedlings, as yet unnamed and unclassified, have originated at Myers and in other parts of the State. Seventy and more varieties are known and esteemed in the East and West Indies. Mangoes have been shipped safely as far as Chicago and Boston, realizing good prices. The Mango succeeds best on high, well-drained land, and is especially at home on the rolling hills of the lake region of South Florida. The fruit may be canned, preserved, or used in almost any way that northern fruits are prepared. The Seminole Canning Company, of Myers, has canned mangoes for several years past, and made a most excellent jelly from them. As to named varieties, I would refer to the catalogues of Reasoner Brothers, R. D. Hoyt and John B. Beach.

The guava ranks high in the esteem of the people of South Florida, as well it may, for nothing in the whole line of fruits can be so easily and cheaply grown, comes so near filling "the hungry gap," and, if located near a canning factory, the hungry pocket book. The guava will flourish and produce abundantly on almost any class of soil, and should be liberally planted by all settlers in South Florida. The Seminole Canning Company, of Myers, puts up large quantities of guavas, paying one cent a pound for the fruit as it comes from the trees. Yet, after all, the chief value of the guava has been for home consumption, for which it is preeminently adapted, in any and every shape that any fruit can be used for food. There is a great future for the guava.

The cocoanut has been very extensively planted on the keys and mainland of extreme South Florida, probably over a million trees having been set in the past ten years. Mr. Wadell, of Key West, told the writer last summer, that the larger part of his plantation, of over 36,000 trees, of from seven to nine years of age, were beginning to fruit. Where produced in a wholesale way, they, no doubt, will prove profitable on the lower coast, and especially so, if the growers combine and put up a factory to turn out dessicated cocoanut, and the various by-products. It is quite likely that the cocoanut will play an important part in the future prosperity of the lower coast region of Florida.

Bananas are of easy culture, and, like the guava, are found growing near the homes of most of the older settlers, the commonest variety being Orinoco, or "horse" banana, with occasional specimens of the far more desirable and really

excellent Cavendish and Hart's Choice. On the lower coast, both east and west, considerable plantations of bananas have been grown in the past, that have paid quite well, for a time, at least.

The Sapodilla grows and fruits to perfection in extreme South Florida, and while it will stand considerable frost, as much, or more than the mango or guava, yet, on account of its slow growth, it will not recover and come to bearing again so quickly. The fruit is of irregular size, but is of the shape and color of a russet apple, and, when ripened on the tree, is of most delicious taste, comparable to that of a rich, juicy pear, and a liking is formed for it on the first trial, always providing the fruit is well ripened on the tree, and not the green, tough fruit, such as is found on fruit stands in places far removed from its place of growth. The sapodilla is the commonest fruit tree in Key West. Large orchards of them are also found on many of the other keys, and they are grown as far north as Fort Myers. With our modern system of refrigeration, it should be possible to ship the ripe fruit to principal points in the Eastern United States.

Avocado pears, melon pawpaws, the Anonas, and quite a list of other tropical fruits, can be grown where the guava and mango can be grown ordinarily, more especially the melon pawpaws, the ripe fruit of which is said to be a specific for certain forms of dyspepsia, and the sliced green fruit and bruised leaves have the property of making tough beef tender, if placed in contact with it for awhile.

THE PRESENT.

"Look on that picture, then on this." Our beautiful tropical fruit orchards are a deplorable sight, and with them go the joys of a summer. It will be awful this summer without any fruit at all. I had lived largely on the hope of the largest mango crop of my life for this summer, and was already sending out invitations to my friends to come and camp under my trees. I had several trees, one of which would have fed a regiment for a season. These had a spread of nearly thirty feet, were twenty feet high and as large as a half-barrel at the ground, and would have borne ten to fifteen thousand mangoes at a crop. They are gone. The Avocado pears went with them. I did not weep, but I felt like the "bottom was out." So wrote Wm. P. Neeld after the December freeze. Then came Jack Frost in February, as if to "make assurance doubly sure," and—nearly did it.

To use a well-worn phrase, "Where are we at?" As yet it is hard to say with any degree of accuracy. Nearly all the young groves and nurseries in the State are killed to the ground, and with them the mangoes, guavas and other tropical fruits, excepting in a very few restricted areas—on Biscayne Bay, the Keys and a few sheltered places on the west coast. At Myers many of the tropical trees have "come to life" again quite unexpectedly, for it was thought that they were all killed. Also the same is true on Lower Indian river and Lake Worth. But the most surprising thing of all has been the way the pineapple plants have "bobbed up serenely" after the fracas; and not only is it so in Avon Park, but in other districts as well. I quote from the Avon Park Idea, of May 2d, as follows:

"The condition in which the pineapple plants of Avon Park have come out of the freezes of the past winter is a very great surprise. We knew them as tender tropical plants, and when the terrible cold first swept down upon them, we were sure it could result in nothing short of their complete destruction. Now, we find that

amongst those planted in the summer and fall of 1894, there is probably not an average loss of above ten per cent., and some lots of from, 6,000 to 10,000 plants each, have not lost above three per cent. Those that were planted a year ago last summer and fall, a few of which would have fruited this summer, have not fared quite as well; but of those not many are killed. Those which appeared to be dead are mostly sending up suckers from below the ground, so that from present appearances there will be but small actual loss of plants. Those planted two years ago last summer were very large, fine plants, and gave promise of a full crop of splendid fruit this summer. A few of them bore last summer and fall, and the fruit was of excellent quality. These it would not be safe to speak of with certainty. In one lot of 13,000, a few dozen, or hundreds, perhaps, have sent up fruit stalks, surmounted with diminutive blossom buds, but the fruit, probably, will not amount to much. In this lot there are thousands of suckers pushing up vigorously and probably as the season advances there will be many thousands more.

THE FUTURE.

Again I quote from The Idea: "The sixty millions—more or less—of our country's population is rapidly increasing. The "coming man," whatever he may do or not do, will be likely to require oranges and pineapples, and the demand will be supplied from some source or sources. Florida might as well supply her share. Instead of wasting time and nervous energy in vain regrets, and unavailing curses, it will be the part of common sense to go to work and as fast as possible repair damages and bring prosperity out of adversity and at the same time accomplish, what is of vastly more importance, namely, the development of a sturdy, self-reliant, self-respecting manhood."

Amen! And if we are to try again to rebuild our orange groves upon the ground which once produced bounteous crops of golden fruit, why should we not also endeavor to reproduce our once heavy laden mango, Avocado pear and other tropical fruit trees. We know how and we know what, and by banking up well with earth each winter, we can save the trunk and soon have a bearing tree again, if a freeze should occur.

One suggestion and I will stop. It was a wiser head than mine that said: "Indeed, there is a great field before us for the selection, improvement and hybridization of the varieties of the guava. It is probable that the guava of the future will be as much superior to these varieties as the Bellflower or Carolina June is superior to the crab apple. So far almost nothing has been done." What Pliny Reasoner thus said of the guava applies, with almost equal force, to the mango especially, and to a whole host of tropical fruits besides. What an inviting field here for a Burbank or a Carman! May we not "in the good time coming" (you know it is not going to freeze again for maybe fifty years) hope for much to be done along this line?

THE PLANT LOUSE OF THE MELON, AND ITS PREVENTION.

Special paper prepared and read by Prof. H. J. Webber, of the Sub-Tropical Laboratory of the United States Department of Agriculture Eustis, Fla.

[SEE MINUTES ON PAGE 3, ITEM 37.]

The most serious disease with which the melon grower of Florida has had to contend is that produced by the plant louse (*Aphis gossypii*). This is a small, dark green bug about one-sixteenth of an inch long, which infests the lower surfaces of the melon leaves. Sometimes they occur in great numbers and thickly cover the lower surface of the leaf. If only a few occur on a leaf, they will usually be found near the mid-rib, or some large lateral vein of the leaf, which somewhat conceals and protects them. The leaves are variously curled and contorted by the action of the pest, and the vitality and productiveness of the plant are frequently reduced. The pest sometimes runs through an entire patch, and if unchecked will almost totally destroy it. It is not only the melon growers of Florida that suffer from this pest, but also those of Georgia, South Carolina and all Southern States.

The same plant louse (*Aphis gossypii*) attacks also a number of other plants, among which may be mentioned the cotton and orange. On the orange they infest the under side of the leaves of young, tender shoots and water sprouts, sometimes causing considerable damage. On the cotton they infest the leaves, flower and young bolls, sometimes killing them, and causing serious damage. On the cotton and orange the remedy given here for its treatment when on the melon will answer equally as well. I have made a number of experiments in treating this pest at Eustis, Grand Island, Gainesville and Ocala, and have found a resin compound spray, made from resin and sal soda, to be very effective in combating it. This is cheap, easily made, handy and effective, and if one is unfortunate in being bothered with the melon louse, they cannot longer complain of the remedy, or the lack of a remedy.

The combination of sal soda and resin to form a resin compound, was first called to my attention by the late R. W. Pierce, of Indian Springs, a member of this Society, who was at one time engaged in the manufacture of soap. Hearing my paper on the white fly and sooty mold read at the Society last year, when the resin wash was recommended as the most effective treatment, he remembered that a sal soda resin compound, much cheaper, was manufactured and might be effective. He called my attention to the method of manufacture, and I have since experimented with this as a spray for various pests. I find that a spray of similar combination has been used by Mr. Koeble in some of his experiments in Oregon and California, but it has not been brought into general use yet.

The formula which I have found the handiest to use, and effective in combating the melon louse is the following:

Resin	8 lbs.
Sal Soda (crystalline)	4 lbs.
Water to make	5 gals.

Place the resin and sal soda in a com-

paratively large kettle with one quart of water; boil, meanwhile stirring briskly till the resin and sal soda are thoroughly melted together and form a frothy mixture without lumps. Now add four gallons of cold water, pouring it in rather slowly, with short intervals between, to avoid chilling the mixture too suddenly. When all the water is added, bring to a boil, then pour out the hot solution, straining through a coarse cloth, and add sufficient water to make five gallons of the solution. This, if correctly made, forms a thick, syrupy solution, of a dark brown, translucent color, which may be preserved as a stock preparation.

For use, dilute the whole formula to fifty gallons, or in the proportion of one part of the stock solution to nine parts of water. Always thoroughly stir the stock solution before measuring out to dilute. The cost of this wash, based on prices quoted by Jacksonville and New York firms, is only about one-sixth of a cent per gallon as diluted. The mixing of the formula for five gallons of the stock solution, according to the directions given above, usually requires about twenty-five minutes. Much time can be saved by mixing a larger quantity at once. The materials for preparing this wash can usually be obtained in small quantities in any town, but retail prices are far too high if the spray is to be extensively used. Resin may be obtained of Pitt Bros., Clarkson & Hyde, or Wilson & Toomer, Jacksonville, at from $1.25 to $1.50 per barrel, of about 275 lbs., f. o. b. Crystalline sal soda (it is important to use crystalline) has been quoted to me by the barrel at 95 cents per 100 lbs. This can be obtained from Geo. B. Forrester, No. 169 Front Street, New York. Both resin and sal soda for this purpose, I am told, can be shipped under fertilizer rates.

The resin compound, when diluted, ready for application, forms a dirty, brownish white mixture. It should be applied to the plants as a fine spray. The handiest apparatus for making this application is a knapsack spray pump with a Vermorel nozzle. The spray should not be thrown down on to the plants, as this will not hit the pests. The nozzle must be turned to one side, giving the spray a horizontal direction. The spray rod can then be placed against or near the plant, and the force of the spray in a horizontal direction turns the leaves and saturates the lower surfaces where the little pests are located. The plant louse to be killed must be thoroughly wetted. All truck gardeners should be supplied with a knapsack spray pump, and it would be well to keep the material on hand for preparing this spray, as it is also a good remedy for the red spider and certain scale insects.

DISCUSSION.

[The discussion given below followed the reading of Prof. Webber's paper.]

PROF. WEBBER:—I should add also that the resin compound may prove a valuable remedy in fighting the white fly. I have had no very pronounced success in using it in the summer, but if used in the winter time it will probably prove effective. In the treatment of the melon louse, as in the treatment of all aphida on those plants where the leaves are near the ground, the effect of certain chemical fertilizers, if used continuously, seems to be very noticeable. Dr. Smith, of the New Jersey Experiment Station, has made a number of experiments along this line, and reports nitrate of soda, kainit and muriate of potash as probably the most active fertilizer insecticides. Fertilizing the soils continuously with these chemical manures, seems in

some way to render them obnoxious for the growth of the plant louse, and such treatment has, in many cases, been found effective in preventing their ravages.

LYMAN PHELPS:—I would like to say in this connection that where melons are planted and only the sulphates are used, a sulphate of ammonia and sulphate of potash, I have never seen the plant louse, yet I have been growing melons for twelve years. Before I used such a preparation, they were eaten up very badly.

A MEMBER:—I would like to inquire if melons are being planted to any large extent for transportation from Florida. I know in Volusia county, where I live, we have a great many melon patches. I would like to know if attention is being directed to melon culture more than usual in Florida.

PROF. WEBBER:—In the region of Grand Island and Clermont, there are thousands of acres of melons.

PRESIDENT ADAMS:—I noticed on the train from Mt. Dora to Sanford, we passed through a great many acres of melons where it was almost entirely a new industry.

J. W. HARDING:—I know in Georgia, in the transportation of melons, the cars run into the large patches, and the transportation is so systematized and well conducted as to make the culture profitable. I would like to know if it can be made profitable in Florida.

MR. WEBBER:—The acreage of melons in Florida this year is from six to eight thousand; this includes the Monticello district, which always grows largely. Melons in Central Florida is probably a new crop as a shipping crop. There is really no way to reckon the acreage. It has been variously estimated by the transportation companies from six to eight thousand acres.

R. C. DOUGLAS:—I would like to ask the Society at large if they have ever had experience with a little green worm, which is very destructive to cucumbers, musk melons and squashes—anything of that nature? In fact, we have almost entirely stopped raising cucumbers and musk melons; once in a while we get a squash through. I have seen them attack pumpkins and make sponges of them, just as many holes as in a sponge, and then go to the leaves, and eat all of the leaves except the fibre, so one could look through it. I tried for two or three, or several years, to raise musk melons, and found these little things. I would go early in the morning and examine them, and find the little pest in there, about an inch or an inch and a half long, about the size of a darning needle, and, if you let them alone, pretty soon they grow as large as a straw. I don't know where they came from, but there would be millions inside of two or three weeks. Where they came from is beyond my comprehension. Somebody told me to put my musk melons above the ground, and they would not touch them. I put them on a wood pile, but they would attack the ripest of them first; they would not let them get ripe.

J. B. KING:—I know the bug well; he comes here generally about the 1st of July. If you have noticed your cucumber plants they are more partial to them—you will see a little butterfly, with a tufted tail, and when you see him, you can look out. When he comes you had better get what you can out of the patch, and leave the rest to him. It is a worm about an inch long, light green color, with white stripe,

tapering towards the end. He takes the vine first, leaving nothing but the ribs.

H. F. DOUGLASS:—I found some of them had got to be as large as my double fist, and just turning to get ripe, and discovered one day one was pretty yellow on the side, and I looked to see what it was; thought maybe it was sunburned; and turned it up and saw there was a hole about the size of a good-sized straw. I wanted to know what made that hole; I took my knife and cut around the hole—thought some body had driven a stick in—and I found a worm down there, and afterwards I examined and found that they were increasing. I went to work, myself and one or two boys, and wherever we found a worm, we would cut the vine and catch him and crush him. But it was no use; they would beat you; get there faster than you could catch them. I thought, probably, Prof. Webber had made some wash to get rid of them.

PROF. WEBBER:—I have not been able to determine what insect Mr. Douglass refers to. From his description, I should judge that a poison spray, to wash the outside of the leaves, composed, for instance, either of Paris green or London purple; but I am not sure what insect he refers to.

MR. DOUGLASS:—I think the gentleman says they eat the inside of his melon and squash, &c. I never saw the worm eat the outside. This worm I speak of just as quick as it gets large enough, they don't do it until they get about forty-eight hours old, if they can find a tender melon or cucumber of any kind, in they go, and it is only a few hours after he gets in there till he is full size; but if there is no fruit for them to eat, then they will eat the vine —clean them up.

A MEMBER:—I saw at one time an experiment tried with a cucumber patch, to get rid of these caterpillars or worms. It was in St. Johns county. They simply run a double furrow around the patch and run water in, and the caterpillars get flooded, and they run them down the creek that way. They flooded the patch with water three or four inches deep, and opened the ditches and carried the caterpillars off.

PEACH CULTURE ON THE WEST FLORIDA HIGHLANDS.

The following notes, by G. W. Mellish, of DeFuniak Springs, Walton county, were handed the Secretary, after the topic "Peaches" had been passed.

[SEE MINUTES ON PAGE 4, ITEM 41.]

Peach culture on the West Florida highlands is an infant industry that is rapidly assuming commercial proportions. Much has been learned during the past five or six years regarding the proper location for an orchard, methods of cultivation, fertilization, and best varieties for shipping to Northern markets.

The lands immediately around DeFuniak Springs are high, sandy and more or less rolling. The natural drainage is perfect, which is a matter of the greatest importance in fruit culture. Open pine lands, with clay four or five feet below the surface, are admirably adapted to peaches. The altitude of this section is about the highest in the State.

Clean culture is generally given orchards for the first two years after planting. In this latitude young peach trees grow during

eight months of the year, if they are given thorough culture, and can be made large enough to bear a bushel of fruit the third summer. As the trees get older, they are cultivated each season until the fruit matures, and grass or beggar weed is allowed to grow during the fall, to be turned under in the winter.

As to commercial fertilizers, blood and bone and potash have been generally used, and my own observation leads me to apply more and more potash to bearing trees. In fact, I think potash should form a liberal portion of the fertilizer from the beginning. The trees should be filled full of it. I think it tends to make healthier wood and hardier fruit.

What varieties are best adapted to our wants is, perhaps, the most important question to be solved. The earliest peach to mature is the Sneed. Its fruit matures in less than sixty days from bloom, and usually ripens here about the middle of May. It is a cling, of medium size, with yellow skin and bright red cheeks. It is a very handsome peach and brings fancy prices.

Next to ripen is the Alexander, well known to all fruit growers, ripens about the last ten days in May. This is followed by Early Tillotson, Mountain Rose, Fleitas (or Yellow St. John), Early Crawford and Foster—all ripening during June.

About the 1st of July the famous Elberta ripens, and all others give way to this wonderful peach, which is certainly the acme of perfection. Crates of select Elbertas, each fruit weighing eight to twelve ounces, are sold in New York at almost incredible prices. The Elberta constitutes about one-half the entire planting, and is considered the best money maker. With this peach the shipping season practically closes.

A new seedling, the Estella, originated on the grounds of Mr. L. W. Plank, at DeFuniak Springs, is being given a thorough trial as a late variety, maturing about September 1st. If successful, it will be a very profitable late variety.

The peaches from West Florida are among the first in the market, and I think the outlook for the future of this industry is very encouraging.

PEACHES AND PLUMS IN SOUTH FLORIDA.

The following discussion occurred under topic "Peaches and Plums," druing the morning session of the third day.

[SEE MINUTES ON PAGE 4, ITEM 42.]

W. E. PABOR:—I am a newcomer. I have had two years' experience in growing peaches in De Soto county. Ever since I have been present at the meeting of this Society, I have had a great sense of disappointment; inasmuch, when deciduous fruits of any kind come up, I find there is no report, no one taking any interest in any of the fruits, except oranges.

Grapes, and kaki, and strawberries were all passed over, and, I presume, peaches, apples and pears will follow the same direction. I can only say, two years ago I opened up a piece of ground in DeSoto county, and set out ten varieties of peaches obtained from the Glen St. Mary Nurseries, Angel, Waldo, Honey, Imperial, etc. I put in about a pint of fertilizer at the bottom of each hill, and have fertilized them twice since. In December the Florida Gem was in full bloom.

But eight varieties out of the ten are now fruiting and only two years old, and have, perhaps, from fifty to one hundred peaches on a tree. This winter I set out ten more varieties, in order to find out what kind of peaches were suitable for the sand-hill country. I know nothing about the proper fertilizer, and I was in hopes, when that subject came up, I would find out something. Of course, I am working in the dark. My attention was attracted to the culture of peaches in that section from an acquaintance with them in Western Colorado, although I did not know whether it would succeed; but it seems evident there are types of peaches suitable for Florida soil and climate, and if we can fruit the peach in two years, and the pineapple in two years, we have something to give us early paying crops while we are waiting for oranges.

H. E. ANDERSON:—I am not growing peaches for a business, although I have two or three hundred trees on my place. About four years ago, I set out six acres in peaches. About two acres of them did well. Those were peaches from the pit that I had sent to me from Georgia. The year before last we had as fine peaches on those trees from the seed as I ever saw. There was no name sent me when the pits were sent, and I do not know the name. We got off those trees as fine peaches as I ever saw in any country. They were all mixed up, different varieties, did not seem any two alike. I want to say that all the Peen-to peaches were killed by the freeze. We had probably a thousand Peen-to peaches at the freeze, and they were killed to the ground; while all the other varieties, the Honey and the other peaches were out in bloom in the first freeze, though that bloom was lost, they have bloomed the second time, and we will make a handsome crop yet; some of the trees are pretty well loaded. As regards plums, our Kelsey and Japan plums are doing extra well this season, the trees are loaded. As to pears, while my pear trees were in bloom, we had a very dry spell, and I made up my mind I would lose my fruit if I did not do anything for it. This last Fall I put in a wind mill, and I went to work and I had two barrels of water put on the pear trees, and a barrel on the plum trees, and I am satisfied it was a perfect success. The pear trees to-day, small as the pears are, are hanging down. I left a few trees I did not water at all, and there are no pears on those trees at all. As regards the grapes, I always water my grapes; I have not failed for three years. I have had people from the North come in my place, and one gentleman, who had traveled all over the United States pretty much, and through California, told me he had never seen finer vines or grapes than at my place; but I have taken special efforts to water. In that way we have raised nearly always a good crop of grapes. I have a number of different varieties. I have an arbor about two hundred feet long on the north side of the house, and I have a little vineyard just below the house of white Niagara. They have done very well.

The following report, by Irving Keck, of Bowling Green, DeSoto county, member of Standing Committee on Peaches and Plums, reached the Secretary after this topic was passed.

[SEE MINUTES ON PAGE 4, ITEM 56.]

As one of your Committee on Peaches and Plums, I beg leave to report that peaches have been almost a failure, the Peen-to entirely so, owing to the killing of the bloom by cold, whilst later varieties have, for some reason, failed to put on the

crop it seemed they should. For South Florida we have not yet hit upon the proper methods to make peaches a success. So far as my observation goes, I know nothing to recommend, but continued trial of different varieties and different methods of cultivation.

In plums the Kelsey was very full of bloom, but failed to set anything like a crop. In one instance I have learned of full crops being obtained by spraying when in full bloom. If this was the cause of the crop, it would seem that some insect preying on the blossoms was the cause of the failure to set fruit. I did not learn of this spraying till too late for this year's bloom, but it seems to me worthy of trial. With me the Botan has been a complete failure; also the Marianna, both on its own roots and on wild plum. From my limited experience, success seems to me to lie in the direction of selecting the best of our wild varieties, and by cultivation and fertilizing, they may be greatly improved. On my own grounds I have two varieties that we think a great deal of; one of them is of good size and almost entirely free from bitter tang; the other is small, dark purple, the size of a very large cherry, the pit and fruit resemble very much a cherry; we use them in the kitchen just as we would cherries, and many do not detect the difference; we can them, and make jellies, jams and preserves. Both of these varieties are fruitful, and though in full bloom in the February freeze, have in spite of all the adverse circumstances, set some fruit.

It seems to me it will be well to turn our attention toward some of these native varieties, with a view to their improvement, as the most hopeful outlook at present.

PEAR CULTURE.

The following paper, by S. S. HARVEY, of Quintette, Escambia County, Chairman of the Standing Committee on Pears and Apples, reached the Secretary after the meeting had adjourned.

[SEE MINUTES ON PAGE 4, ITEM 43.]

MR. PRESIDENT AND FELLOW MEMBERS:—As Chairman of your Committee on Pears, I have to report a very considerable increase of acreage throughout the pear belt, which only includes the northern portion of the State. There have been well directed efforts of intelligent men to cultivate the pear in Central and Southern Florida, but the success attending these efforts is not encouraging. I find some very fine-looking pear trees through the centre of the State, that will not fruit, and all efforts to fertilize them, so as to make them productive, have failed. As we have pears fruiting well in the northern tier of counties, on soil similar to the soil on which some of these failures occur, it seems probable that the trouble is the result of climatic causes.

The two varieties of pears that have been most generally planted in the pear belt are the LeConte and Keiffer, the LeConte being decidedly in the lead in acreage put in.

The LeConte pear tree is such a wonderful wood maker, and bears such immense crops of fruit, that it has appeared that all that was necessary was to set out the young trees, and in a few years gather a crop of fruit—that even when handled and marketed in the most crude manner, it gave almost fabulous returns per acre.

The ease with which fine returns have been obtained, has caused increased acreage and a carelessness in growing the orchards, gathering, packing and marketing the fruit, that must, if continued, make very sick, if it does not kill, the goose that produces these wonderful results.

The LeConte is a very fine pear, if handled with reasonable good judgment. It is a very poor, almost worthless, fruit, if handled without good judgment. In cultivating the tree, rare good sense must be used to get the tree into proper shape and able to carry a portion of the fruit it will set. Its natural disposition is to make long, willowy limbs, and set a great mass of fruit at the extreme ends of those limbs. This natural disposition must be counteracted, so as to force increased size of limbs for their length, and distribute the fruit more evenly over the tree, and at the same time keep the fruit nearer the base of supply of food—the body and roots. After you have succeeded in raising fine trees, great care is necessary in preventing the trees from overloading—thinning out the trees severely. After this fruit has grown to be about mature, great care must be observed as to the proper time to pick it from the tree. Take a large, handsome pear from the tree before it is mature, and it will shrivel and become a tough, woody, tasteless mass—no juice, no flavor. Allow it to mature on the tree, and pick it just as it changes to a light green—the skin becomes glazed at that time—and it will ripen in a few days to a rich, juicy fruit, of fine flavor. If covered with paper, or placed in a dark place, it will be much better. Then, again, if the fruit is allowed to remain on the trees until it begins to ripen—turn yellow—it becomes dry and mealy, and will rapidly decay at the core. It is the first and last of these stages that has given and will continue to give, if persisted in, a bad name to the LeConte pear in the Northern markets. More care and better judgment must be used in picking and shipping the fruit, or we will find no market for the LeConte pear. I assert most positively that the LeConte is a fine fruit, one of the very best of pears, if raised, picked and handled properly. But I also think it the most difficult of good pears to handle properly. Great care must be used in picking from the trees, and still greater care must be used in the packing house to leave out all the under and over-ripe fruit.

At present the deciduous fruit business of our State is carried on in a loose, hap-hazard way; unless we cultivate and market in a better, more business-like manner, we will find but little profit; and any year of a general full crop, we are likely to come out of the season with a large portion of the fruit on our hands, and a dead loss on that we send into market. The careless, indifferent shipper will destroy the markets and make a loss for all raisers.

The Keiffer pear is a fine wood maker, an early bearer, and the trees carry immense crops. It is still a question, to be decided by experience, as to whether it can be made a good money crop for our pear belt. The fruit grows to immense size, is not a very good hand pear, but one, if not the very best, of cooking pears. In the natural order, it should ripen here the last of September, but is fine for all culinary purposes if picked from the tree during August, long before it is full grown. If put in the market during September or October, it comes in competition with the general fruit crop of the Middle and Northern States.

The Bartlett, Duchess d'Angouleme, Garber, Lawson, Jefferson, Clapp's Favorite, Sugar Seckel, Winter Nellis, and many

other varieties do well in Florida. They nearly all make wood slow, come into bearing late, and are shy bearers when compared with LeConte or Keiffer; so they are not yet cultivated to any great extent. But as the deciduous fruit industry is brought to a commercial basis, I am satisfied many of these varieties will be extensively cultivated. It is only within a few years that any attention was paid to deciduous fruits in our State. I think it was but two years since, that the first full car load of deciduous fruit was shipped out of West Florida. From indications now, there will be over one hundred full car loads this year, and the business is only in its infancy. In the northern tier of counties pears will be the leading fruit cultivated. But peaches are rapidly coming to the front, and may lead in quantity produced in the near future.

The blight appeared in some of the orchards of Middle Florida several years since. It gradually spread from year to year, until now there are but a few orchards in the State that have not been attacked by that disease, so feared by the pear growers the world over. In some cases the orchards have been almost destroyed, in others very little damage has been done. But even where very severe, trees recover from it, and again bear the usual amount of fruit.

The Division of Vegetable Pathology of the Department of Agriculture has for a number of years been making a special study of the blight. They have carried on extensive experiments under the most favorable conditions, and we may well look to them for a remedy, or means of prevention, if either is possible to man.

It is settled beyond doubt that the blight is caused by microbes, likely of the plant kingdom; they belong to the family of bacteria, the smallest of living things. The question of dissemination is still unsettled, but the best authorities now think the microbes are disseminated by insects. It is agreed that the microbes only enter the tree through the tender buds and flowers, and pass to the larger limbs or body from the small stems, spurs, or limbs. It is also well settled that the microbe winters in the tree affected, and if all diseased parts are carefully cut away and destroyed by burning, the disease will be much less prevalent and the damage to orchards be materially reduced. A careful cutting when the disease is shown by the dead leaves, and again in the fall at the annual pruning or thinning out, would be of great service, and with our present knowledge, the only preventive. The danger of leaving on the tree or ground, the diseased wood, may be likened to leaving the body of a person who had died of yellow fever unburied. The sap of some trees may not be a congenial medium for the propagation of the microbe, as some people's blood is not a congenial medium for the propagation of the yellow fever microbe. It seems to me that the remedy, if found, must be in working on the sap of the tree.

But with all the damage the blight has done, or may do, the cultivation of pears for profit is, and will continue to be, one of the leading industries of Northern Florida. The greatest damage to the prospects at present is careless cultivation, gathering, packing and marketing. Once get the business down to a business basis, so that the careless, ignorant and indifferent cannot destroy the reputation of the fruit, the cultivation of deciduous fruits, and especially the pear, will be a good paying business.

PEARS AND APPLES.

The discussion given below took place under topic "Pears and Apples," during the morning session of the third day.

[SEE MINUTES ON PAGE 4, ITEM 44.]

SECRETARY MANVILLE:—I should like to hear from Mr. Mellish, of DeFuniak Springs, on the pear prospect in West Florida.

G. W. MELLISH:—Being the only member present from west of River Junction, I have some hesitancy in speaking for this section, which is a very distinctive territory in this State, in soil, climate and fruits grown. Pear trees grow very vigorously over there, and when not too severely attacked by blight are very profitable. Col. S. S. Harvey has made a notable success with pears, but he is in an isolated location, and blight has not injured him. Just now, in the DeFuniak section, we are having to contend with blight in a severe form, and as a result have few pears this season.

W. S. HART:—In regard to apples, I think our President covered the ground when he said, at a previous meeting, there is more profit in growing oranges in Massachusetts than apples in Florida.

G. L. TABER:—I agree with Mr. Hart on the apple question. There is no particular profit in growing apples in Florida. Still the trees grow and we get some fruit, and a good many like to have apples because they are apples. Referring to pear blight. In my orchards I have some fifteen or twenty acres of pears, and let me say, in passing, that I have found pears very profitable, and that we have a good crop this year. Among the trees referred to, about twenty-five have shown blight; five were so badly affected that we had to remove three-fourths of the top; these showed blight first, and it got the start of us; but since then we have kept it cut out, going over the trees every week or ten days during the season when the blight is showing, and the other trees that have been attacked are therefore but slightly affected. I am confident we shall be able to keep it down, unless it gets much worse than it does at present. Of course, we have not suffered as they have in the western portion of the State and in Georgia. But there is no doubt in the world that every man who sets out pear trees will have to contend with blight. Prof. Morton B. Waite, of the U. S. Department of Agriculture, has been carrying on an exhaustive investigation of pear blight for a number of years. He recently made a tour through the pear growing sections of Florida. While at our place, he showed us, with the aid of his microscope, the blight in different stages of development, from blight "cultures," which he had with him, as well as fresh blight from the trees. The pear blight is caused by a parasite, a very small microbe, only discernible by a microscope. It remains under the bark through the winter, and is carried from the exuding sap in the spring by insects, and deposited upon the new growth, and in this way introduced into the tree. It first attacks the new growth and blossom buds

and blossoms, which die. Sometimes it does not show until the pears are as large as peas. Sometimes it is introduced into the blossoms by bees, and is thus widely distributed and it involves a good deal of work to cut it out.

A MEMBER:—What effect does it have on the leaves of the tree?

MR. TABER:—The young shoots turn black, also the leaves; but the leaves do not fall.

MR. MELLISH:—In planting pear trees with a view to keeping out blight, they should be headed low, all the main limbs should come out below three feet, the object being to have the tops within reach, so that the blight can be seen and cut out readily. Then, bear in mind that the blight always attacks new growth, never the old growth; and keep the new growth off the main limbs and branches, the attacks will then be confined to the extremities, where it can be cut out. If there are tender shoots on the trunk or large branches, the latter will be attacked, endangering the whole tree.

SECRETARY MANVILLE:—One word about blight. Pear blight is a local affection. It does not enter into the sap of the tree; it has no effect upon the tree beyond the parts attacked; it never extends through the organs or sap of the tree from the point of attack to other portions of the tree, but develops only by the extension of the local affection; the microbes work in the inner bark only, and they continue to work until sometimes large areas are involved; but they do not pass from one part of the tree to another, except by pushing out through the inner bark from the point of first attack—the damage lies in the destruction of this inner bark. Thus by cutting off a twig that has blight beyond the line of affection, that particular attack of blight is forever gotten rid of. As Mr. Mellish has said, blight can only get into the tree through the new growth and the blossoms. If the new growth is kept off the trunk and main laterals, the attacks will be confined to the terminal branches, and the question of preventing serious injury to the tree is simply a question of the feasibility of keeping the blight cut out as fast as it appears.

W. H. LAWRENCE:—I represent Middle Florida, where we grow pears, and I thought the members would like to know what is going on in the pear industry. The prospect with us for LeConte, Keiffer, and other pears is decidedly gloomy. After the two blizzards, our trees looked well, and, in fact, showed no perceptible signs of being frozen. When blooming time came along, the trees were perfectly white with bloom, and all growers were in good cheer; some went so far as to commence talking about barrels for shipping. Ere long the fruit commenced to drop and is still dropping. Thousands of limbs are dead at the ends, presenting a black, unsightly appearance. Some call it blight. Others think that it was caused by the hard winter. I know of many old pear trees that I can put all of their crop in a nail keg.

NOTES ON GRAPES IN WEST FLORIDA.

The following Notes, by G. W MELLISH, of DeFuniak Springs, Walton County, reached the Secretary after the topic "Grapes" had been passed, and did not, therefore, come before the meeting.

[SEE MINUTES ON PAGE 3, ITEM 35.]

Grapes continue to do well on the high, rolling lands of West Florida. Vines six to eight years old show little or no disease on leaves or berries. The best success is on lands which have a loose, sandy, subsoil; where the roots can run down, unobstructed, for ten or twenty feet, they seem to get a hold on life that will endure forever, at the same time the surface soil is full of feeding roots. I give my vines shallow cultivation. As to varieties: Many of the black grapes do not ripen the berries evenly, and only a few sorts will stand long distance transportation. The Niagara still holds first place as a commercial grape. It can be put in the Northern market in better condition than any other variety. The prices realized last year (1894) were from $1.50 to $3.00 per 20-pound crate. I have had good results with grapes, and have had no report of fruit arriving in bad order or of berries dropping from the stems. As with everything else, there must be liberal manuring to obtain liberal results. I am more than ever convinced that potash is a good thing in grape fertilization. I also use potash for my pear trees; for the past three years I have fertilized my pear trees with blood and bone and fifty per cent. sulphate of potash, in the proportion of two pounds of the former to one pound of the latter, and I have been satisfied with the results. There is another thing that I am becoming more and more convinced of. It is that both fruit trees and vines require more room in the South than they do in the North. If I were to plant another vineyard, I would set the vines 10 by 12, or 10 by 15 feet apart. Land is cheap in Florida, and the least expensive way to fertilize and irrigate vines is by giving them plenty of soil room.

[For full information as to grape culture in Florida, see the published reports of the proceedings of previous annual meetings of the Society.]

THE CALIFORNIA PRIVET AS AN ORNAMENTAL HEDGE PLANT.

Paper prepared by A. V. CLUBBS, of Pensacola, Escambia County, Member of the Standing Committee on Ornamentals, and read by the Secretary.

[SEE MINUTES ON PAGE 4, ITEM 47.]

To the Members of the Florida State Horticultural Society:

Having been assigned a duty with the Committee on Ornamentals, I have thought best to give an outline of my practical experience with ornamental hedge plants, and will speak of the Ligustrum Californica, described by Henderson, as "a species of recent introduction," is a shrub remarkable for the beauty of its foliage. The leaf is considerably larger than that of the common Privet, of very dark, waxy green on the upper surface, and the under surface pea green. The plant is of rapid growth. Singly upon the lawn it is of great beauty, while its adaptation for a hedge is perfect." There are so many plants that are a success in the North, and prove failures in the South, that it gives me great pleasure in saying that eighteen years cultivation of this plant more than justifies the above description by Henderson.

Commencing with a single plant, from its cuttings I soon had plants by the thousand and beautiful hedges by the hundred yards. Grown singly and slightly trimmed annually to any desired form, it has abundance of white bloom in early spring, which is beautiful and very fragrant, and a choice food for the honey bee in its season. Closely trimmed, in a solid hedge, it rarely shows any bloom, but always presents a beautiful appearance with its evergreen foliage. On rare occasions the foliage is injured by exceptional frosts. The plant itself is never hurt by frost or insect, nor is it subject to dying out in spots, like some otherwise valuable hedge plants.

In preparing to plant a hedge with this plant, the soil should be well broken up with the plow, and a liberal quantity of well rotted stable manure thoroughly worked into the soil. Cuttings of the last season's growth, twelve inches long, may be planted in double rows, one foot apart each way. The cuttings should be of medium thickness, planted about eight inches in the ground, and planted before the spring growth commences. It would be well to plant some spare cuttings, that may be rooted at the same time, to take the place of any that should fail to grow. It is best to trim very closely for the first two years to cause the plants to branch near the ground. The plant being strictly ornamental, with no thorns, it must be protected from cattle, horses and goats. When grown singly, it should be thoroughly fertilized when planted, and annually trimmed to any shape or form desired. This trimming should be done when growth is checked by dry weather, about midsummer, so as not to destroy the bloom buds, which will mature later in the fall for spring blooming. To keep up a thrifty growth, some surface application of fertilizer should be applied as needed, from year to year, and with reasonable care, we may be sure of satisfactory results in all sections of Florida, and the South generally.

ORNAMENTAL PLANTING.

Paper prepared by Mrs W. H. H. Holbridge, of Grove Park, Alachua County, Chairman of the Standing Committee on Ornamentals, and read by the Secretary.

[SEE MINUTES ON PAGE 4, ITEM 47.]

Mr. President and Members of the State Horticultural Society:—The subject given me for this report, "Ornamentals," so far as it means the culture of desirable trees, shrubs and flowers, the making of fine lawns, or the surrounding of our homes with rural beauty, should receive far more attention by horticulturists than has often been given it. The beauty of any rural home depends, to a large extent, on the number and arrangement of shade and ornamental trees.

It is not my province to give a lengthy dissertation on landscape gardening, or instructions on the preparation of the soil, and the proper methods of transplanting trees, but let me say that whatever is worth doing in the preparation and transplanting of trees, shrubs, or plants, is worth doing well, so that they may make a good, healthy start from the beginning. Though this is a timbered country, how few there are that build in the midst of hammock, or take advantage of the original trees—as Friend Bacon of No. 9 did—selecting and retaining such as are pleasing to the eye, and convenient for shade? As most of our homes are on high pine lands, we are as privileged to select location for and variety of the trees we plant, as though we were in a prairie country. Persons with small places, or with limited means should not attempt too much. Attempt only the simple and the natural, and the sure way to secure this is by employing as leading features only trees and grass. A few forest or ornamental trees, well grouped and so arranged as to leave the most pleasing views unobstructed, but hiding anything unsightly—not too much crowded, as most new beginners are apt to get them, give universal pleasure. They contain in themselves the basis of all our pleasing sensations in house adornments, and they are the most enduring sources of enjoyment in any place. There is no need of the streets and our door-yards being covered with the naked sand, for there is some grass that will make a fairly good lawn in every part of our State. At our place, Grove Park, Bermuda grass makes as good a turf, and as fine, velvety streets, as blue grass does in the North, and is green most of the year, and when brown in mid-winter, still covers the nakedness of the soil. As for trees, the freeze of the past winter, added to our past experience, has taught us not to depend too much on exotics; for trees from the North, as a general rule, do but poorly here, and trees from a more tropical country—well, they are frozen—and even the beautiful camphor tree, more hardy than the orange, after passing unscathed through the December freeze, was mostly ruined in February.

There is no country in the world that has a larger variety than ours of beautiful native trees, well suited for landscape gar-

dening or home adornment—mostly evergreen and lovely the year round. Being thus right at hand, only needing a little care, a little labor in removing and nurturing them, there is no excuse for failing to use them.

AZALEAS AND PALMS.

The discussion given below took place under topic "Ornamentals," during the morning session of the third day.

[SEE MINUTES ON PAGE 4, ITEM 47.]

MRS. P. H. ROLFS:—I would like to know if any one has cultivated the native Azalea, or the native Rhododendron?

W. H. H. HOLDRIDGE:—I planted some Azaleas in a nursery, and they bloomed for a year or two; but I happened to have them on dry, sandy soil, and they did not continue to do well. But at Pensacola I saw the most beautiful Azaleas in full bloom, and I think with proper care they would do well in almost any other location in the State. I have native Rhododendrons at my place; they bloom in February or March.

E. S. HUBBARD:—As palms are a most ornamental plant, it may interest the Society to know which are the most hardy. Of the large collection of Mr. E. H. Hart, of Federal Point, the palms which escaped without being affected at all by cold, aside from the common cabbage Palm, or *Sabal Palmetto*, were the *Chamærops excelsa*, or Chinese Fan Palm, and the *Chamærops humilis*, or the European Fan Palm; those, with *Cocos australis*, are four palms that escaped without being affected by the cold at all. Of the Date palm, the *Phœnix Canariensis*, or Canary Island Date, lost its leaves, but they are growing again and have now some three or four feet of fresh green growth, and the same is the case with the *Phœnix sylvestris*, or the Wild Date of India. *Phœnix dactylifera*, or common date, of which large plants were not killed, is also replacing the foliage which was destroyed by the freeze; the same is true of *Washingtonia robusta*, or California Fan Palm. These are the principal palms whose hardiness has been determined; there are many other varieties the hardiness of which is as yet doubtful.

OUR NATIVE FRUITS.

Paper prepared by A. W. STEWART, of Galt, Santa Rosa County, member of the Standing Committee on Native Fruits, and read by the Secretary.

[SEE MINUTES ON PAGE 4, ITEM 50.]

MR. PRESIDENT AND MEMBERS OF THE FLORIDA STATE HORTICULTURAL SOCIETY:—In making this report on native fruits, I cannot agree with some of the former reports, that we have no native fruits worthy of mention. We have two kinds

of sloes, which make fine preserves and jelly, and one of them is fine canned, and we can use the stock for grafting early varieties of plums and the German prune, as it is late in putting out, which prevents them being killed by frost in the northern part of the State.

Then there is the native persimmon, varieties of which in some sections are fine. I have seen some nearly as large as the Japan persimmon, and very fine, while in other sections they are small. The native persimmon is used as a grafting stock for the Japan persimmon.

The blackberry is worthy of mention, and when cultivated is fine, and can be used in different ways. The dewberry comes in early, and if cultivated is large and makes a good market fruit, and can be used in various ways.

The blueberries and huckleberries help many a poor family, and even the rich find them good. I am told that the sea grape is found in some sections and is very fine. The fruit of the sour orange can be used in many ways, and the trees are extensively used as a grafting stock for sweet oranges. Some of the wild grapes, if cultivated, are fine and make good wine. Also the May haw, of which we have three kinds. The pawpaw will do to fill up with when we have nothing better, and some are very fond of them. All the native fruits are welcome, until we can get better ones, and, in fact, some of the new kinds are not much better than the natives would be, if we took the same care of the latter.

FERTILIZERS AND FERTILIZER INSPECTION.

Paper prepared and read by STEPHEN POWERS, Editor "Florida Farmer and Fruit Grower", of Lawtey, Bradford County, Chairman of the Standing Committee on Fertilizers.

[SEE MINUTES, ON PAGE 4, ITEM 51.]

MR. PRESIDENT AND MEMBERS OF THE SOCIETY:—This subject has been discussed at every meeting, over and over, from muck to Mapes and back again to muck, until it has become somewhat wearisome, or, at least, difficult to treat in an original manner. Practically considered, therefore, I shall only say that I still adhere unalterably to the belief that for all classes of fruits grown in this soft and humid atmosphere, and destined to be transported a thousand miles to market, chemical fertilizers should be chosen always in preference to those of organic origin. Fruits grown on the latter may present as inviting an appearance, and be as agreeable in flavor —though even this is not a point to be considered in most instances—but when it comes to the matter of shipping them on long journeys by rail or water, a well-trained engineer would as soon think of battering down the intrenchments of an enemy with masses of putty, instead of the customary balls of iron and lead. Fruit, which is forced to be transported to the Northern markets, must, first of all, be

firm; second, it must be firm; third, it must be firm; and organic manures, unless thoroughly rotted, will not produce firm fruits.

The writer has no very extensive experience as an orange grower, but has been fairly successful as a strawberry grower. The berries from Lawtey, this season, are sold at prices from five to ten cents a quart above those from other sections of the State. Lawtey keeps horses, keeps cows, keeps pigs and poultry, and appreciates them highly; but they are uniformly put to the use of nourishing or otherwise ministering to the comfort of human beings, and not the strawberry plants. To this fact, fully as much as to the qualities of soil, does the writer attribute the flattering prices which are obtained for these berries. No farm manures of any consequence are ever permitted in a Lawtey strawberry bed; and even cotton seed meal and nitrate of soda are not thought of later than December 1st to 15th.

We growers once made the experiment of shipping a car load of berries to Chicago in an Armour refrigerator car, used for the transportation of meats. The result was a mass of mold and rottenness, and to-day the best informed growers would as soon think of attempting to ship strawberries again in a beef car, as to ship them with organic fertilizers in their juices.

ECONOMIC AND LEGAL ASPECTS.

A few words in regard to the fertilizer law itself. As it now stands, the Florida fertilizer law imposes an inspection tax of 25 cents per ton, and this tax is undoubtedly paid, in the end, by the consumer, the grower, because all prudent dealers will enter this 25 cents into all their calculations of cost, especially in these times of storm and stress. Now, probably, no intelligent grower would complain of this tax, if he could be assured that nothing less would afford him protection, that is, give him such a modicum of protection against fraudulent goods as to make him feel reasonably safe. But there is not a grower in the State, who would not complain of a tax of twenty-five cents, if he could be convinced that only half the amount would answer the purpose equally well.

It is a safe calculation that the fertilizer consumed in the State in 1894 reached a total of 50,000 tons. If this all paid the inspection tax, it yielded a revenue of $12,500. This is more money than is needed to pay the salaries of the State Chemist and the Inspector, and all the other expenses incurred in executing the fertilizer law. One-half of this amount would probably answer all purposes, and therefore a substantial reduction in the amount of the inspection tax could and should be made.

The benefits of the law are unquestionable, and no well-informed, impartial man will demand the abolition of it. The moral value of a State inspection law is very considerable. It can safely be affirmed that at least two fraudulent brands of fertilizers—one of which was little more than the street sweepings of New York—have been banished out of Florida by the existence and enforcement of this law. It is a great restraint upon a rogue to know that there is a specific statute forbidding the rascality which he contemplates. But this is not saying that the law might not be more efficiently enforced than it is at present; and while we believe the State dealers very generally seek to conform to its requirements, and to deal honestly with the people, it is a well-known fact that occasional shipments of fertilizer from outside points pass through Jacksonville without ever paying the inspection tax. Of

course an annual visit from the inspector cannot prevent this. There ought to be an officer at a moderate salary to inspect every cargo of goods that enters Jacksonville. He should be required to keep an accurate account of all shipments and have a certificate of inspection signed by every shipper.

INSECTS AND INSECTICIDES.

Paper read by PROF. P. H. ROLFS, of the Agricultural Experiment Station, Lake City, Columbia County, Chairman of the Standing Committee on Entomology.

[SEE MINUTES, ON PAGE 4, ITEM 55.]

SAN JOSE SCALE (*Aspidiotus pernicious*, COMS.)

This insect was first introduced into San Jose valley, California. From here it was sent to Prof. Comstock, then Entomologist of the United States Department of Agriculture, and named as above. It was so named because of its destructiveness, being undoubtedly the most pernicious Aspidiotus.

Within the last two or three years there have been a great many outbreaks in sections east of the Rocky Mountains. A number of these have been traced directly to the San Jose valley.

Two outbreaks have occurred in Florida and have been discovered by the Experiment Station. Immediately steps were taken to eradicate the insect. The first place it was discovered was at DeFuniak. In this section there are about 1,200 acres of fruit trees that are liable to be attacked. Of this area there are about 300 acres that are more or less infested. Some few orchards are worthless and had better be cut out and burned; but many of them are not so badly infested as to be considered valueless.

The fancy strains of plums and some of the peach trees that are less vigorous are most severely attacked. The LeConte pear escapes in most every case, only a few insects being discovered on some trees. In fact, these trees when growing in infested peach orchards are so free from the insects that we can hardly consider them as in danger, but they must be considered food plants for the insects.

The first step taken by the Experiment Station was to locate the orchards and find out to what extent the insect had been disseminated; after this the work of destroying it was begun. The summer resin wash, recommended by the Division of Entomology, United States Department of Agriculture, was used. This was found to be very effective for the young scale that had formed a waxy covering. The mature forms often escape—so it is a slow way of extermination, requiring repeated sprayings to make it effective; even in this case some of the insects are very likely to survive. It has been recommended that the main spraying be done in the winter. This, however, does not seem to be borne out by the experience at De Funiak. The scale in the fall seek cracks or crevices on the trees, especially the space between the winter bud and the main twig. In some cases as

high as seven insects were taken in such a position, where it is almost impossible to kill them. In the summer the insects do not seek such locations, but rather crowd toward the ends of the twigs. While it is quite difficult to wet the under side of the leaves completely, it can be done by perseverance.

The time allowed to elapse between the repeated sprayings should depend very largely upon the atmospheric conditions. During cold weather the insects are less active and multiply less rapidly, consequently the spraying need not be repeated so frequently. If one has a very large orchard, however, there is considerable danger of the insect passing through its larva stage before the first sprayed trees can be reached again. A cheaper and more expedient manner of treatment is desired.

The Hubbard kerosene emulsion was used, but the strength required to do the work increased the expense for the material, so this was exchanged for the resin wash (summer wash).

Resin	20 pounds.
Caustic soda, 70 per cent. strength.	5 pounds.
Fish oil	3 pints.
Water to make	100 gallons.

The second outbreak of the San Jose scale was at Norwalk. They were on trees that had been received from a Florida nursery man in the spring of 1894. Immediately upon receiving the specimens, the Experiment Station Entomologist proceeded to the nursery and made a thorough examination for the scale, but there was not the least sign of diseased material. Just how this could have occurred cannot be explained with our present knowledge of the case. However, all the trees were immediately destroyed, and it is probable that the case has been stamped out at once without any serious loss to any one.

If there are any other orchards infested in the State, these are not known to the Experimental Station.

In a special bulletin, issued by the Division of Entomology, Department of Agriculture, and in a bulletin issued by Dr. J. B. Smith, of the New Jersey Experimental Station, a very complete history of the San Jose scale is given.

CUCUMBER APHIS (*Aphis gossypii* GLOVER.)

Mr. Pargandee, Assistant Entomologist, Department of Agriculture, has determined that the cotton louse and the orange Aphis, the cucumber and melon plant louse are all one and the same insect.

If Mr. Pargandee's conclusions are entirely correct, this information will be of great value in combating this insect, as we must look out for it on our various plants, especially that of the orange to destroy it there, and thus keep it from our melons and cucumbers.

I have taken this very destructive insect, working on cucumbers and melons, in widely separated portions of Florida, so that I feel fairly safe in stating that it is generally distributed over the State. It is most destructive on the watermelon, and has been incorrectly called the Hessian fly.

The severity of these attacks varies, however, in different years. Whenever one kind of food plant becomes scarce, it is more likely to become more severe on other crops. The best time to fight this insect is upon its first appearance. If the watermelons be watched closely as they are being worked, one will notice that the first leaves begin to crumple up. They do not become dry, nor lose their vitality, but show injury on the under side of the leaf. In one case, at least, the insect was kept from injuring the crop by

pulling the vines and covering them with dirt, so as to kill both vine and insect. This seems like a very severe treatment, but it was certainly profitable in that case.

Like a contagious disease, these insects often spread from a center, the origin of which is very difficult to explain. Usually they are noticed on a single plant, where they will seem to remain for a week or ten days, when they will be discovered on some vines near and in three weeks they may spread over an area of a quarter of an acre.

Persons having an orange grove near a melon field should spray for these insects as soon as they appear on the young shoots of the orange trees.

Melon vines badly attacked by the aphis are usually useless and might as well be destroyed at once.

INSECTICIDES.

Kerosene emulsion has been used and is very effective, but it is very difficult to reach the insect with any form of liquid spray, as they collect on the under side of the leaf, and the leaf curls under, so as to form a kind of a pocket. The insect multiplies so rapidly that if you were to destroy three-fourths of them, it would only be a week or so until they were as numerous as before.

The sulphur spray has been used, but this is not effective enough to be recommended. The resin wash used for scales and insects has been found very effective where the insect can be reached; but this is a very difficult task, and as stated before, their rapid multiplication prevents this from being a complete remedy.

The liquid insecticides have been more or less ineffective, so several Experimental Station Entomologists have turned their attention toward using gas.

There are two forms of this that are now engaging the attention of different experimenters, hydrocyanic acid gas and a gas arising from the volcanization of carbon bisulphide.

CARBON BISULPHIDE.

There seems to be some difficulty in applying this substance rapidly, consequently it has not met with the approbation which it deserves; however, instruments may be perfected soon that may add to the speed in applying it. Where the field is not too large, a covering may be made by fastening two halves of a barrel hoop together at right angles, then cover this with paper. This will form a tent-shaped cover. By placing this down on the ground, so none of the fumes can escape, it may be left over the plant for fifteen or twenty minutes, after the carbon bisulphide has been placed in some dish, so it can evaporate under cover.

The chances are that all the insects will be killed at once, and as these insects do not lay eggs on the cucumbers or melons, there will be no second generation to combat.

PICKLE WORM (*Eudioptis nitidalias* CRAM).

This insect has been sent to the Laboratory for identification several times this year.

It not only attacks the pickle, as the name indicates, but also squash. By studying the life history of this insect, the important discovery has been made, that it passes the early portion of its larval life on the leaves of the plant, and only bores into the fruit in its later stage. Consequently these may be combated by using Paris green or London purple. It is necessary, however, to use them with caution, and not so much in regard to poisoning people as that of burning the plants. If the Paris green is of strong quality, one-fourth pound to a barrel of water is sufficient, but it is so frequently adulterated that it would be well for one to use as strong a solution as the plant could stand.

There is very little danger of any one being poisoned by the use of fruit that has been sprinkled with Paris green or London purple: even when so much Paris green has been

used as will scald the foliage, there would not be enough poison on the fruit to be injurious to the health if one were to use it skin and all.

PEACH OR PLUM APHIS.

There are two insects that frequently attack the plum and peach. One is called the peach louse or plum louse, depending on where it is found; the scientific name is *Myzus cerasi*, and the other is usually spoken of as the black louse, from its being a little darker than the former, it being known as the *Aphis persicæniger*.

The plum trees have suffered much more than the peach trees in our locality; but the latter of these insects has been much more abundant than the former. Nearly all of the specimens that have been sent in this year have been the latter.

These insects are found generally in the portions of the State that raise plums. They grow on the wild ones as well as the tame, but are noticed much more on the tame ones. The eastern portion of the State is not so badly infested as the portion west of the Suwanee river.

INSECTICIDES.

Kerosene emulsion is one of the first solutions that has been used for spraying. This is effective; but it should be borne in mind that the insects are hard to reach, and, consequently, a good deal of material will have to be used on the portions affected. It will not be very difficult, however, to kill off enough so as to give the tree a decided rest; then in a few days kill off more of them. For the last two years this insect has disappeared about the middle of May, or before the fruit has begun to ripen. They leave the plum for some other plant, to return to the plums in the fall to distribute their eggs, which hatch in the spring.

The resin wash will be found a much more effective remedy, and not quite so expensive, as the kerosene emulsion.

These insects have a good many insect enemies, but they are not sufficient to be a check.

TOMATO WORM (*Heliothus armigera*, L.)

This insect is widely distributed over the State of Florida. I think that there is no region in the State that grows tomatoes that is free from it.

It is by no means particular as to what kind of plant it will live upon. Specimens have been taken from tomatoes, cotton, squash, cucumbers, English peas and other plants. A great deal of attention has been paid to it by the Division of Entomology, Department of Agriculture, in relation to the cotton crop.

At the present time we have no easy or satisfactory way of dealing with this enemy. One of the tomato growers near Palmetto, Fla., told me that 50 per cent of his crop was destroyed by these insects last year, but he gathered all the worm-eaten tomatoes and destroyed them, and as soon as the shipping season was over, he destroyed the vines. This year we could not find as much as 5 per cent of his crop that was affected by the boll worm. Another field in this vicinity, that was not treated in the way described above but was neglected, had 80 per cent. of the tomatoes in sight cut by the boll worm. This experiment is certainly well worth being repeated, and it is not at all improbable that we shall be able to check the ravages of this insect to a remarkable degree. It seems to me that it is not necessary to have more than 5 per cent. of the fruit destroyed, even if your neighbors do not pick their wormy tomatoes. If the fields are contiguous, there will be much more danger; but if there is a hammock, or another kind of woodland between, it is quite probable that your neighbor's field will not cause much damage. This remedy, it seems to me, is the most profitable one that has been brought to our notice.

COTTONY CUSHION SCALE, FLUTED SCALE (*Icerya purchasii*, MSKL.)

Last summer some specimens were sent to

the College asking for the determination of the species. These specimens proved to be the Cottony Cushion Scale. It had been brought into the groves from California.

The introduction and spread of this insect is exactly known. It had only been two and one-half years since a few specimens came in a tin box from California.

Immediately upon receiving these specimens, the Entomologist of the Experimental Station directed a letter to the proprietor of the infested grove, advising him to destroy by fire immediately all plants and trees infested. Mr. H. G. Hubbard, special agent of the Division of Entomology, United States Department of Agriculture, received specimens about the same time, and immediately proceeded to the spot. He witnessed the destruction of property and the spraying of plants with kerosene emulsion.

The work had been so thoroughly done that everybody seemed satisfied that the insect had been killed out. Six weeks later, on visiting the place, thousands of the insects could have been collected, in spite of the fact that the proprietors had been very vigilant in trying to exterminate the pest.

This time the same kind of measures were taken, that is, all shrubbery that contained insects were consigned to the flames, and the rest of the area thoroughly saturated with the emulsion.

About six weeks later, a second visit was made to the infested field. Thorough search was instituted, and for the pains of over two hours' close search, in the hot sun, the Entomologist was rewarded by finding five specimens. Even with all of this vigilance, the insect was not subdued; but there can be no doubt but that the cold norther this year has killed out the last vestige of them.

EGG PLANT AND TOMATO APHIS.

A very interesting outbreak of the Aphis has been noticed on egg plants and tomatoes in the same field. At first only a few were noticed on the under side of the leaf, but later on there seemed to be millions on a single leaf, often crowded so closely that many of them were unable to find standing room.

The plant thus affected ceases to grow, or only growing a very little, depending upon the severity of the attack. They dropped their fruit and buds; egg plant about this time (May 7th) was bringing good prices in the market, hence, it was very desirable to get as much of it as possible. The sulphur spray was tried, but this was not effective—it did not kill the insects. Kerosene emulsion was also tried, but this killed the plants. So the resin wash was resorted to; this killed all the insects that were hit with the wash, but there were so many to be killed, that it was impossible to eradicate them, and the job of spraying the under side of the leaves was so difficult that it was given up as impracticable.

IRRIGATION.

Paper prepared by GEO. H. WRIGHT, of Orlando, Orange County, Chairman of the Standing Committee on Irrigation, and read by the Secretary.

[SEE MINUTES, ON PAGE 5, ITEM, 58.]

MR. PRESIDENT AND FELLOW MEMBERS:

The subject assigned me has been so ably treated in the past before this Society by eminent hydraulic engineers, that I find it difficult to present any new matter that will prove valuable to the members of our Association. The value of water in growing trees, plants, and vegetables is so well established that it is hardly worth while to consume any time on this part of the subject.

The questions to be considered are: First, is it necessary to resort to artificial means to supply water, to successfully grow crops and trees in Florida? Second, can we make more money in our business by resorting to irrigation? Third, is the natural rainfall sufficient for all purposes for crop raising?

I have seen several statements that the average rainfall in Florida was sixty inches per annum. This would seem to be all sufficient for our purpose, and it probably would be, if it was evenly divided through the twelve months of the year. Unfortunately, however, this is not the case. I have known 110 consecutive days without any rain, and again I have known eleven inches to fall in twenty hours. These extremes clearly demonstrate that natural precipitation is not reliable and certain for successful horticulture and agriculture. The winter season, especially in the south half of our State, is the dry season, and at the same time thousands of acres of vegetables are being planted and grown.

To grow the best fruits and vegetables, three things are necessary: Plenty of water, fertilizer and cultivation. With plenty of water, less fertilizer is required; but with a lack of water, more fertilizer and labor must be applied; and then the results are uncertain. If we could select our lowest lands that are naturally moist, not so much rain would be required. This we do not consider a safe thing to do; as frost strikes oftener on low lands, hence the successful gardener goes to the higher pine land to plant his seed and raise his crops for early market.

Having settled the question that irrigation is necessary to obtain the best results, there comes the more momentous question of how shall we raise the water to distribute over our fields and groves? There are to-day several powers used in this work, viz., hydraulic rams, wind engines, steam pumps and pulsometers. Where a fountain head can be secured by springs or artesian wells, the hydraulic ram is the cheapest, the least expensive to operate. This method will raise from one-fifth to one-third the water that passes through the receiving pipe, for each foot of head the

water can be raised about nine feet; but few places in Florida, however, can secure flowing wells or springs with sufficient head to make this system available. The wind engine or wind mill is the next cheapest system for raising a given amount of water. There has been such valuable improvements in wind engines in the past few years, that it is now one of the recognized motive powers for raising water. The value of those made on the principle of the air-motor engines, made wholly of steel and iron, when properly erected, with the necessary storage tanks, can not be ignored. A twelve-foot wheel, erected thirty-five feet high, with a three knot breeze, will lift forty feet high, 5,000 gallons in twenty-four hours. This will be sufficient to proper y irrigate six acres once a week if kept running, and with a greater velocity of wind, a greater amount of water is made available.

The steam pump is the system in general use where a large amount of water is required. This requires boiler, engine and pumps—all requiring more or less experience in engineering and mechanical skill.

There is yet another power, known as Pulsometer. This system does away with pump and engine, is easily operated and seldom out of repair, and costs much less than the steam pumps generally in use.

When the grower is ready to irrigate, I would caution him against the errors of many beginners: First, in not using enough water at one time—a very common error; and second, in watering too often. My observation, both under glass and in the open field, is to water thoroughly, using not less than one inch of water and then allow the soil to get somewhat dry before watering again. In irrigating, throw the water into the air, so as to let it fall on the trees and plants. This cleans the leaves, wets the twigs, cleans out insects and invigorates the whole vegetable system, and uses less water to do thorough work than by allowing the water to run through ditches, or only on the surface.

NECROLOGY.

Report submitted by A. H. MANVILLE, G. L. TABER and J. B. ANDERSON, Committee on Necrology.

[SEE MINUTES, ON PAGE 2, ITEM 14.]

WHEREAS, For the first time in the history of this Society death has made inroads upon its membership, and the sad duty devolves of making the first entry in the Society's necrological roll; and

WHEREAS, The following members have died during the year:

R. W. PIERCE, of Sunset Hill, Fla., at Sorrento, Fla., on April 4, 1895, aged 61 years.

GENERAL DAVIS TILLSON, of Rockland, Me., and Leesburg, Fla., at his home at the former place, on April 30, 1895, aged 65 years.

J. C. BALLARD, at his home, Lake City, Fla., on January 28, 1895, aged — years.

J. K. HAWKINS, at his home, Brunswick, Ga., on October 18, 1894, aged 45 years.

E. E. CHAFFEE, at his home, Ankona, Fla., on July 9, 1894, aged 54 years.

Therefore,

Resolved, That we hereby express our appreciation of the character and services of these, our fellow members, and hereby record our recognition of the great loss we have sustained in their death; and

Resolved, That we hereby express our sorrow and tender our sympathy to the families and friends of these departed co-workers.

ROBERT W. PIERCE.

Mr. Pierce, whose death is recorded above, was born at Rochester, Mass., May 21, 1833. He came to Florida from Massachusetts, in 1876, and engaged in fruit growing, remaining a resident of this State up to the time of his death. A widow and three children (two sons and a daughter) survive him, also a son and daughter by a previous marriage.

As proprietor of the Sunset Hill Nurseries he was widely known. A man of genial and cheerful nature, he had many friends and was highly esteemed by everyone for his strict integrity.

Mr. Pierce was a prominent and active member of the Society from its incipiency—his name being one of those inscribed upon the roll of original members at its organization.

RESOLUTIONS OF THANKS.

[SEE MINUTES, ON PAGE 5, ITEM 59.]

WHEREAS, The Hon. L. B. Wombwell, State Commissioner of Agriculture, has again generously aided this Society, having published the proceedings of the last meeting, first in the Bulletin, thus giving them wide circulation, and afterward in book form, without cost to the Society; therefore

Be it Resolved, That the thanks of the Florida State Horticultural Society are hereby tendered Mr. Wombwell, with the assurance that his assistance and courtesy are appreciated.

Be it Resolved, That the thanks of this Society are hereby tendered to the Jacksonville Board of Trade for the use of their rooms and other courtesies.

Be it Resolved, That to Mr. E. Bean and to Messrs. D. Greenleaf and Stephen Powers, his associates on the Committee of Local Arrangements, the thanks of the Society are due, for their successful efforts to provide for the comfort and convenience of the Society and its members.

Be it Resolved, That the General Passenger Agents of the railroads of Florida have extended to them through the Secretary an expression of appreciation and thanks for the low rate charged members of the Society in attendance at this meeting.

Florida State Horticultural Society.

Catalogue of Fruits.

1895.

NOTE OF SUBMITTAL.

At the Pensacola meeting of the Society (April, 1893), in conformity to a resolution passed, a Committee was appointed to prepare a Catalogue of the fruits of the State on a systematic plan, on the same general lines adopted by the American Pomological Society, showing the relative adaptability to each section of the several fruits grown in the State.

At the annual meeting for 1894 the Committee reported progress and was given further time.

At the last annual meeting the Catalogue was submitted, and, it being impracticable for the Society to take it up for revision until it was printed, it was ordered included in the annual report for the current year in the form in which it came from the Committee.

The Catalogue herewith presented is the result of extensive correspondence and collation, covering a period of four years and aggregating several months' continuous labor. Prepared with the aid of many of the best informed horticulturists of the State, and approved by the Executive Committee of the Society, it has, perhaps, been perfected as far as was possible in an initial draft, and is submitted with some confidence.

For important contributions to this Catalogue, acknowledgments are due as follows:

To Lyman Phelps, E. H. Hart and E. S. Hubbard, for aid in preparing the lists of Citrus Fruits.

To G. L. Taber (member of this Committee), for aid in preparing the lists of Deciduous Tree Fruits.

To Emile Dubois, for aid in preparing the list of Grapes.

To Jas. H. White and R. D. Hoyt (of this Committee), and especially to E. N. Reasoner, for aid in preparing the lists of Tropical Fruits.

A. H. MANVILLE,

CHAIRMAN COMMITTEE ON CATALOGUE OF FRUITS.

PLAN OF CATALOGUE.

In making a complete Catalogue of the Fruits of Florida, indicating intelilgibly, in summarized and tabular form, the relative value of varieties for different sections, the wide-stretching territory, diversity of soil and climate, and the limited range of each of the numerous fruits, render it essential that the State be divided, so that regions allied throughout in their adaptability to fruits may be designated and referred to.

To this end, four districts have been formed, as described below. Geographical lines cannot be made to indicate pomological conditions with accuracy. More than approximate correctness could not be expected from an arbitrary division of this kind, especially where local conditions vary so greatly as in Florida. Working by general averages, some sections are unavoidably left in the wrong districts, judging by the standard of local conditions. The divisions, however, will be found to answer their purpose as well, or better, than any that could be made without further sub-divisions, which would be impracticable.

WESTERN NORTH FLORIDA--That portion of the State west of the Aucilla river.

EASTERN NORTH FLORIDA—That portion of the State between the Aucilla river and a straight line drawn across the State from the mouth of the St. Johns river to Cedar Keys.

CENTRAL FLORIDA—That portion of the State between the line above referred to and the counties constituting Southern Florida.

SOUTHERN FLORIDA—The counties of Brevard, Dade, Monroe, Lee, DeSoto and Manatee.

EXPLANATION OF ABBREVIATIONS

The abbreviations and signs used in the columns which appear in the ensuing pages explain as follows:

ORIGIN—Of variety or species. (Refers to species, race, or geographical derivation, as best calculated to define.)
- A., American.
- E., English.
- E. I., East Indies.
- F., Foreign.
- H., Hybrid.
- J., Japanese.
- N., Native of Florida.
- O., Oriental.
- S. A., South America.
- W. I., West Indies.

ORIGIN—(Referring to peaches only).
- H., Honey race.
- N. C., North Chinese race.
- N. O. B., New Oriental Bloods.
- Per., Persian race.
- P-to., Peen-to race.
- S., Spanish race.

ORIGIN—(Referring to grapes only).
- A., Aestivalis.
- L., Labrusca.
- R., Riparia.
- V., Vulpina.

SEX—Of variety. (Referring to strawberries only.)
- B., Bisexual.
- P., Pistillate.

USE—Of fruits.
- d., Dessert, eaten without culinary preparation.
- c., Culinary, including drinks, confections, condiments and domestic and manufactured preparations for gustatory use.
- s., Shipping, for general market; good long-distance carrier.
- n., Near-by market only. (Because of restricted demand or poor carrying qualities.)
- a., All purposes named above.
- w., Wine. (Referring to grapes only.)

SIZE—Of fruit.
- l., Large.
- m., Medium.
- s., Small.
- v., Very.

FORM—Of fruit.
- b., Blunt (obtuse).
- c., Conical.
- e., Eliptical.
- f., Flattened (oblate).
- h., Heart-shaped (cordate).
- k., Kidney-shaped (reniform).
- l., Lemon-shaped.
- o., Ovate.
- ob., Obovate.
- ol., Oblong.
- p., Pyriform.
- pt., Pointed apex.
- q., Quarter-marked.
- r., Round.

FORM—Of bunch (applies to grapes only).
- br., Broad.
- cl., Cylindrical.
- cp., Compact.
- sh., Shouldered.

COLOR—Of fruit, except as to peaches, where it refers to flesh. Use adjective or noun according to application. Thus, r. stands for "red" or "reddish"; r. y., "reddish-yellow"; r. & y., "red and yellow" (as a yellow fruit with red cheek or other red markings).
- b., Black.
- bl., Blue.
- br., Brown.
- bz., Bronze.
- c., Crimson.
- cr., Carmine.
- d., Dark.
- g., Green.
- l., Light.
- o., Orange (not a shade of red, but the color of ripe oranges).
- p., Purple.
- r., Red.
- s., Salmon.
- sc., Scarlet.
- v., Violet.
- w., White.
- y., Yellow.

CLASS—Of fruit.
- C., Clingstone.
- F., Freestone.

QUALITY—Of fruit.
b., Best.
f., Fair.
g., Good.
v., Very.

FLESH—Of fruit (applies to strawberries only).
f., Firm.
m., Medium.
s., Soft.

SEASON—Of ripening of fruit.
E., Early.
Ev., Everbearing.
F., Fall.
L., Late
M., Medium.
S., Summer.
Sp., Spring.
V., Very.
W., Winter.
(V. E., "very early"; L. M., "late medium", etc.)

VIGOR—Of tree, vine or plant.
g., Good grower.
m., Moderate grower.
v., Vigorous grower.

PROLIFICNESS—Of tree, vine or plant.
f., Fair bearer.
g., Good bearer.
p., Prolific.
s., Shy.
v., Very.

ADAPTABILITY—Of variety or species to region named.

(*) One star—Recommended for region named.

(**) Two stars—Especially well-adapted and desirable.

(†) A dagger—New, recently introduced, or but little known, and promising.

(—) A dash—Not adapted, or found undesirable.

( ) Blank space—No mark or sign in "Adaptability" column indicates that no report has been made.

CITRUS FRUITS.

ORANGES—(*Citrus aurantium*).

NOTE.—The development of orange culture in this State has given rise to a multiplicity of varieties, many of which, while meritorious, have no distinctive qualities, or superiority, as compared with others. It is impracticable to avoid this duplication by cutting down the list, which would exclude many desirable kinds that have been extensively planted, or about which there is demand for information. To avoid the confusion of a long list embracing many kinds without distinctive diferences, the plan of using two kinds of type has been resorted to.

The names in heavy type are designed to constitute a complete list for the State, embracing varieties of the highest excellence in all the desired characteristics of season, quality, distinctiveness, productiveness, etc. The names in light type are those whose characteristics are possessed in an equal or superior degree by other varieties which appear in heavy type. Some varieties in light type equal others in heavy type having the same characteristics, but where there is a difference it is in favor of the varieties in heavy type. In cases of equal excellence, the best known has the preference. So that the varieties in heavy type, as a whole, and without disparagement to other excellent sorts, may be said to embrace the leading kinds for general culture.

New, or comparatively unknown varieties also appear in light type; but for this distinction see "Adaptability" column.

NOTE.—In referring to the time of ripening, in the column headed "Season", "very early" applies to varjeties marketed in September and October; "early", to October and November varieties; "early medium", November and December; "medium", December, January and February; "late medium", February and March; "late", March and April; "very late", April, May and later.

NOTE.—The region of orange production proper extends southward from Central Florida, overlapping the upper portion of Southern Florida. Therefore, under "Adaptability" below the varieties have been starred for "Southern Florida"; here, however, the starring applies more particularly to the upper portion of the district.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		Fruit.						Tree.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
SWEET ORANGES—*Citrus aurantium dulcis.*													
1 Acapulco	F	d s	l	r	o	g	M	g	p	—	—	*	*
2 Acis	F	d s	l	r	o	g	L	g	p	—	—	*	*
3 Amory Blood	F	d s	m	r	o r	g	E M	v	p	—	—	*	*
4 Atwood Navel	F	d s	m	e	o	g	M	g	s	—	—	*	*
5 Baldwin Blood		d s	m	r	o r	g	M	g	p	—	—	†	†
6 Beach No. 5		d s	l	e	o r	g	L M	g	p	—	—	*	*
7 Bell		d s	l	o	o	g	M	g	p	—	—	*	*
8 Bessie	N	d s			o	g	L			—	—	*	**
9 Boone (*Boone's Early*)	N	d s		r	l o		V E			—	†	†	*
10 Botelha	F	d s	m	r	o	g	M	g	g	—	—	*	*
11 Buttercourt	F	d s	m	r	o	b	M	m	v p	—	—	†	†
12 Centennial	N	d s	m	r	o	b	E M	v	p	—	—	**	†
13 Charley Brown	F	d s	l	f	o	g	M			—	—	*	*
14 China Sweet		d s	m		o	g	M			—	—	*	*
15 Circassian	F	d s	s m	r	o	v g	M	g	g	—	—	*	*
16 Colman (*Sanford's Sweet Blood*)		d s	m	r f	o r	v g	E M			—	—	*	*
17 Cunningham		d s	m		o	v g	E M	g	g	—	—	*	*
18 Drake Star	F	d s	l	r	o	g	M	v		—	—	*	*
19 Double Imperial Navel	A	d s	m	e	o	v g	M	g	s	—	—	*	*
20 Dulcissima	F	d s	s	r	o	v g	E	g	g	—	*	*	*
21 Dummit	N	d s	l		o	g	M	v	p	—	—	*	*
22 Du Roi	F	d s	m	r	o	g	L M	v	p	—	**	*	*
23 Early Oblong	F	d s	m	e	o	f	V E	g	p	—	—	*	*
24 Egg (*Beach No. 1*)	F	d s	s	o	o	f	V E	g	p	—	*	*	*
25 Enterprise Seedless (*Starke Seedless*)		d s	m	r	o	v g	E	g	v g	—	—	**	*
26 Exquisite	F	d s	m	r	o	v g	E M	g	p	—	*	*	*
27 Foster	N	d s	m	r	o	g	E	g	p	—	*	*	**
28 Harts Late (*Tardive, Brown, Excelsior*)	F	d s	m	e	o	g	V L	v	p	—	—	**	**
29 Higley Late	F	d s	m	r	o	g	L	v	p	—	—	**	**
30 Homosassa	N	d s	m	r	o	v g	M	v	p	—	—	**	*
31 Imperial Blood	N	d s	m	r	o r	v g	E			—	—	*	**
32 Jaffa	F	d s	m	r	o	b	M	g	p	—	*	**	*
33 Jaffa Blood	N	d s	s	e	o r	b	M	g	p	—	*	**	*
34 Knickerbocker Blood		d s	m	r	o r	v g	M		p	—	—	†	†
35 Lamb Summer		d s		e	o		V L			—	—	*	*
36 Long	F	d s	m	o	o	g	M	g	p	—	—	†	†
37 Madam Vinous	N	d s	m	r	o	b	M	v		—	—	**	*
38 Magnum Bonum	N	d s	l	r	o	v g	M	v	g	—	—	*	*
39 Majorca	F	d s	m	r	o	b	L M	v	p	—	—	**	**
40 Maltese Blood	F	d s	s	e	o r	b	M			—	—	*	*
41 Maltese Egg	F	d s	s m	o	o	v g	M	g	p	—	—	*	*
42 Maltese Oval (*Garey Med. Sweet*)	F	d s	l	e	o	v g	L	g	p	—	—	**	**
43 Mays Best		d s	m	r	o	v g	M	g	g	—	—	*	*
44 Mays St. Michael		d s	m	r	o	v g	M	g	g	—	—	*	*
45 Mediterranean Sweet	F	d s	l	e	o	v g	L	m	p	—	—	*	*
46 Melitensis Navel	F	d s	l	re	o	v g	E	g	f	—	†	†	†
47 Nonpareil	N	d s	l	r	o	b	E M	v	p	—	*	**	*
48 Old Vini (*Beach No. 4*)	N	d s	m	r	o	v g	M	v	p	—	—	*	*

ORANGES—Continued.

NAMES	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
49 **Paper Rind** (*St. Michael*)	F	ds	s	e	l o	g	L M	g	v p	—	—	*	*
50 **Parson Brown**	F	ds	m	e	o	g	E	v	p	—	*	**	*
51 Peerless	N	ds	m	r	o	v g	M	v	p	—	—	*	*
52 **Pineapple**		ds				v g	M	v	p	—	—	**	*
53 Prata	F	ds	s	r	l o	g	M	g	g	—	—	*	*
54 Prolific	F	ds	m	r	o	v g	M	g	v p	—	—	†	†
55 Queen		ds	m	o	o	g	M	v	v p	—	—	†	†
56 **Ruby** (*Sanguinea, Du Roi Blood*)	F	ds	m	r	o r	v g	E M	g	p	—	*	*	*
57 St. Michael	F	ds	m	r	o	g	M	g	p	—	—	*	*
58 **St. Michael Blood**	F	ds	m	r	o	b	M	g	p	—	—	*	*
59 St. Michael Egg	F	ds	l	o	o	f	E			—	*	*	*
60 Sauls Blood		ds	m	f	o r	v g	M	g	p	—	†	†	†
61 Star Calyx	F	ds	l	r	o	g	M	g	g	—	—	*	*
62 Sustain Navel	F	ds	l	r	o	g	M	g	v s	—	—	?	?
63 **Sweet Seville** (*Sanford's Sweet Seville*)	F	ds	s	r	o	g	V E	v	p	—	*	*	*
64 Thorpe (*Trophy*)	N	ds	m	r	o	g	V E			—	*	**	*
65 Valencia Late	F	ds	l	e	l o	g	L	g	p	—	—	*	**
66 **Washington Navel**	F	ds	l	r e	o	b	E M	g	s	—	*	*	*
67 White	F	ds	l	r	l o	g	M	g	p	—	—	†	†
68 Whittaker		ds	m	r	o	v g	M	v	p	—	—	*	*
MANDARIN ORANGES—*Citrus aurantium nobilis.*													
69 **China** ("*Mandarin*")	F	ds	m	f	l o	g	E M	g	v p	*	*	**	*
70 Cleopatra ("*Spice Orange*")	F		s	f				v	v p	—	—	**	*
71 **Dancy Tangerine** ("*Tangerine*")	N	ds	l m	f	r	v g	M	g	v p	—	—	**	*
72 Japan Tangerine	F		l	f	r	g	M	g	p	—	—	**	*
73 **King**	F	ds	l m	f	r o	b	V L	v	v p	—	—	**	*
74 **Satsuma**	F	ds	m	f	o	v g	V E	g	v p	**	**	*	*
75 Sprack	N	ds								—	—	†	†
76 Tangerona	F	ds	m	f	l o	g	V E	g	p	—	—	†	†
77 Traveler		ds	m	f	o	g	M	g	p	—	—	†	†
BITTER ORANGES—*Citrus aurantium bigaradia.*													
78 **Bitter Sweet**	N	d e	l	r f	d o					—	*	*	*
79 Dwarf	F	e	l	r f	d o					—	*	*	*
80 Italian Sour	F	e	l							—	?	?	?
81 Navel	F	e	l							—	?	?	?
82 **Phillips Bitter Sweet**	N	d e	l	r f	d o					—	**	**	*
83 **Sour**	N	e	l	r f	d o					—	*	*	*

REMARKS—On varieties as numbered above: Nos. 25 and 50, desirable early sorts; 18, 49, 61 and 64, distinct; 19, native of Louisiana; 22, distinctly corrugated, desirable; 28 and 73, very desirable late sorts; 29, 30, 32, 39, 47 and 52, desirable; 70, unique rather than utile, quality poor; 71, a market favorite; 74, a favorite in early market; 78 and 82, very refreshing in summer; 83, refreshing acid; 10, 11, 15, 20, 22, 27, 37, 40, 53, 54, 55, 57, 59, 61, 62 and 67, came from Thomas Rivers, of England, the well-known nurseryman.

OF ORANGES, the leading fruit crop of the State, and great staple of the Central region, over five million boxes were produced in the season of 1894-95.

THE NAVEL VARIETIES are much esteemed on account of the delicate texture and superior quality of their fruit. They are usually shy bearers, although experience indicates that they are much more prolific upon "rough" lemon and trifoliata stocks than, as generally grown, upon orange stocks.

THE BLOOD VARIETIES are sweet, and therefore marketable, early in season, as indicated by the abbreviations in the "Season" column. At this time their distinctive character is not apparent, and they have little advantage in market over other early sorts. As the season advances, their ruby tints develop, until quite apparent on the exterior, and their quality continues to improve until, at full ripeness, they are equaled by few and surpassed by none. In locations sufficiently exempt from frost to permit their being held on the trees until they reach perfection, they bring high prices and are exceptionally profitable.

THE SATSUMA is valued on account of its hardness, which is increased by being grafted upon the entirely hardy Trifoliata stock. As it is marketed before cold weather (it ripens very early), it is much planted in sections north of the usual range of oranges.

OTHER VARIETIES.—Excluding the Navels, Bloods, and Satsuma, noted above, and without disparagement to other sorts of equal merit, the following are suggested as a desirable list for general planting, arranged in order of succession: *Very Early*, Boone, Sweet Seville; *Early*, Enterprise Seedless, Parson Brown; *Early Medium*, Nonpareil, Centennial; *Medium*, Pineapple, Jaffa, Homosassa; *Late Medium*, Majorca, Du Roi; *Late*, Bessie, King, Maltese Oval; *Very Late*, Hart's Late.

Varieties distinctly marked in their exterior appearance, like the Navels, Bloods, Du Roi, etc., are, other things being equal, most desirable for market.

POMELOS—Grape Fruit (*Citrus Pomelanus*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Aurantium	N	d s	l m	r	l y	g	L M	v	v p	—	—	**	*
2 Hart	N	d s	l	r	l y	v g	L M	v	v p	—	—	**	*
3 Josselyn	N	d s	l	r	l y	g	L M	v	v p	—	—	**	*
4 Seedless								†	†	—	—	†	†
5 Triumph	N	d s	s m	r	l y	v g	L M	v	v p	—	—	**	*
6 Walter	N	d s	l m	r	l y	g	L M	v		—	—	**	*

THE POMELO.—Growing the Pomelo for market is a comparatively recent development, but considerable quantities are now shipped, and its culture is rapidly extending. It has proved popular in the general market, and its culture profitable. Its range of adaptability is about the same as the orange. Most of the older trees were planted before named varieties were introduced. The above list comprises the leading kinds now generally planted.

LEMONS—(*Citrus limonum*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Belair	F	c s	m	b l	l y	b	F	v	v p	—	—	*	**
2 Eureka	F	c s	m	l	l y	g	F	v	v p	—	—	*	**
3 Sicily (*Sanford's Thornless*)	F	c s	m	l	l y	b	F	v	v p	—	—	*	**
4 Villa Franca	F	c s	m	l	l y	b	F	v	v p	—	—	*	**

THE LEMON.—Lemon growing in Florida is an industry of some importance, the crop of 1894 being estimated at 150,000 boxes. The tree stands less cold than the orange, and planting is confined to lower latitudes and locations of comparative frost exemption. The foregoing varieties are highly esteemed and generally planted.

MINOR CITRUS FRUITS.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
KUMQUATS—Kin Kans (*Citrus Japonica*).													
1 Marumi	F	d c s	s	r	o			m	p	—	*	**	*
2 Nagami	F	d c s	s	o	o			m	p	—	*	**	*
LIMES (*Citrus limetta*).													
3 Mexican	F	c s	m	l	l y	v g		v	v p	—	—	*	**
4 Persian	F	c s	m		l y					—	—	*	**
5 Tahiti	F	c s		l	l y	v g				—	—	*	**
CITRONS (*Citrus medica*).													
6 Lyman	F	c	m	l	o y	g				—	—	**	**
7 Lemon	F	c	l	l	o y	g				—	—	**	**
8 Orange	F	c	s	r	o y	f				—	—	**	**
SHADDOCKS (*Citrus decumana*).													
9 Blood	F		l	r	l o	f		v		—	—	**	*
10 "Forbidden Fruit"	F									—	—	**	*
11 Mammoth (or Orange)	F		l	r	l o	f		v		—	—	**	*
12 BERGAMOTS (*Citrus bergamium*)										—	—	*	
13 OTAHEITES (*Citrus sinensis*)										—	—	*	*
14 TRIFOLIATAS (*Citrus trifoliata*)										*	*	*	*

REMARKS—On varieties and species as numbered above: No. 12, grown as an ornamental, yields an essential oil; 13, grown as an ornamental, and as a stock for dwarfing—fruit valueless; 14, a hardy species, grown as an ornamental, extensively used as a stock and for hedges—fruit valueless.

DECIDUOUS FRUITS.

PEACHES—(*Persica vulgaris*).

NOTE.—The time of ripening of any particular variety varies considerably, in Florida, as elsewhere, according to season and locality. Under head of "Season", "very early" means April 20 to June 15; "early," from June 1 to July 15; "medium," from July 1 to August 10; "late," from August 1 to September 20; "very late," September 10 to November 1.

NOTE.—"Color," as applied to peaches, refers to the flesh, and not to the exterior, as with other fruits.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE.					
		Use.	Size.	Class.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Alexander	Per	d s	m	F	w	f	V E	g	f	**	—	—	—
2 Amelia	Per	d c n	l	F	w r	b	E	g	f	*	*	—	—
3 Angel	P-to	d s	l	F	w	b	E	v	v p	*	**	**	**
4 Bidwell's Early	P-to	d s	m	C	w	g	V E	g	p	—	*	**	**
5 Bidwell's Late	P-to	d s	l	C	w	g	E	v	v p		**	**	**
6 Cabler's Indian	S	d c n	l	C	r	g	M	g	f	**	*	—	—
7 Chinese Cling	NC	d n	l	C	w	g	M	g	f	*	—	—	—
8 Chinese Free	NC	d n	l	F	w	g	M	g	f	*	—	—	—
9 Climax	H	d s	m	F	w	g	E	g	p	*	*		—
10 Colon	H	d s	m	F	w r	v g	E	g	p	†	**	†	
11 Columbia	S	d c n	l	F	y	g	M	g	f	*	—	—	—
12 Countess	S	d n	l	F	w	g	M	v	p	**	*	*	†
13 Crawfords Early	Per	d s	l	F	y	b	E	g	f	*	—	—	—
14 Early Cream	H	d s	m	F	w	g	E	g	p	**	**	*	—
15 Elberta	NC	a	l	F	y	b	M	g	p	**	—	—	—
16 Ferdinand	H	d s	m	C	w r	b	E	g	p	†	**	†	
17 Fleitas (*Yellow St. John*)	Per	d s	l	F	y	g	E	g	f	†	—	—	—
18 Florida Crawford	S	d c n	l	F	y	b	M	g	f	**	*	*	—
19 Foster	Per	d s	l	F	y		E		f	†	—	—	—
20 General Lee	NC	a	l	C	w	g	M	g	f	**	*	—	—
21 Gibbons October	S	d n	l	F	w	g	V L	g	f	**	*	*	—
22 Honey	H	a	m	F	w	g	E	g	v p	*	**	*	
23 Imperial	H	a	l	F	w	v g	E	g	p	**	**	*	
24 Japan Dwarf Blood	NOB	d s	m	F	r	f	V E	m	f	*	*	†	
25 Jessie Kerr	Per	d s	m	F	w	f	V E	g	f	**	—	—	—
26 Jewel	P-to	d s	m	F	w	g	V E	g	p	—	†	†	
27 La Magnifique	S	d c n	m	C	w	g	L	g	g	*	*	†	
28 La Reine	S	d c n	m	C	w	g	M	g	g	*	*	†	
29 Maggie	P-to	d s	m	C	w	g	V E	g	g	—	*	**	**
30 Mountain Rose	Per	d s	m	F	w	b	E	g	f	*	—	—	—
31 Onderdonk	S	d c n	m	F	y	g	M	g	f	*	*	—	—
32 Oviedo	H	a	l	F	w	v g	E	g	p	†	**	†	—
33 Pallas	H	d s	m	F	w	g	E	m	f	*	*	—	—
34 Peen-to	P-to	a	m	F	w	g	V E	v	v p	—	*	**	**
35 Powers September	S	d n	m	F	w	g	V L	g	f	**	*	*	—

PEACHES—Continued.

NAMES (*Varieties.*)	Origin.	DESCRIPTION.								Adaptability.			
		Fruit.						Tree.					
		Use.	Size.	Class.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
36 Red Ceylon	NOB	c	m	F	r	g	VE	g	p	—	—	*	*
37 Reeves Mammoth	S	d c n	m	F	w	g	M	g	f	*	*	*	—
38 Sneed	NC	d s	m	C	y	g	VE	g	g	**		—	—
39 Taber	H	d s	m	C	w r	b	E	g	p	†	**	†	
40 Thurber	NC	d c n	l	F	w	g	M	g	f	*	*	—	—
41 Triana	H	d s	m	F	w r	g	E	g	p	†	**	†	
42 Victoria	S	d c n	l	F	y	g	L	g	f	**	*	*	
43 Waldo	P-to	d s	m	F	w	g	VE	g	p	—	**	**	*
44 Yum Yum	P-to	d s	m	C	w	g	VE	g	g	—	*	**	**

Remarks—No. 6, a fine blood peach; 25, much like Alexander in tree and fruit, preferred to the latter by many; 26, a new variety, seedling of Waldo, introduced by T. K. Godbey and claimed by him to ripen two weeks earlier than Waldo, although blooming at same time; 3 and 43 bloom a month later than any other varieties of the Peen-to race (except Jewel)—hence especially desirable where late frosts occur; 34, flat, like a tomato; all the other varieties listed are of standard peach shape; 36, not a dessert peach, but especially desirable for cooking.

The Peach is successfully grown in localities throughout the greater portion of the State, and in the Central and Northern districts is extensively produced for shipment to Northern markets. As a rule, for this purpose, only those varieties are grown which are marked "early" and "very early" in the above table, and which come in before the general crop farther north. To this there are some exceptions, notably in Western North Florida, where some mid-season varieties, like Elberta, are successfully grown for shipment.

While the list of peaches grown in the State embraces many varieties, the various sections, covering a wide range of latitude and longitude, differ to such an extent in soil, climate and conditions of local environment, that the varieties adapted to a particular region are comparatively limited in number. A first and vital essential to successful peach production is the adaptability of variety to locality; in general this is true of peaches to a greater extent than other fruits, and especially so in Florida.

THE BEST VARIETIES.

Lower Central and Southern Districts.—For very early market, Bidwell's Early, Maggie, Peen-to, Waldo, Yum Yum; for early market, Angel, Bidwell's Late. The foregoing are all of the tropical Peen-to race. Red Ceylon, also a tropical peach, is well adapted. For succession for home use, try varieties of Honey and Spanish races starred for lowest ranges, which do fairly well in localities.

Upper Central District.—For very early and early market, the same varieties recommended for Lower Central and Southern Districts, except that for early market, in many localities the following varieties of Honey race should be added: Colon, Ferdinand, Early Cream, Honey, Imperial, Oviedo, Taber, Triana. Some of the Spanish varieties succeed, such as Countess, Florida Crawford, Gibbon's October, La Magnifique, La Reine, Power's September, Reeves Mammoth, Victoria.

Eastern North Florida.—For very early market, Waldo, and perhaps Jewel; for early market, Angel, Bidwell's Late, and the varieties of Honey race named above. Here (with the exception of the new Jewel) of the Peen-to race only Bidwell's Late and the late-bloomers Angel and Waldo are

retained. These and the above-named varieties of Honey and Spanish races are well adapted: other Honey and Spanish varieties do well, but the above are the leading sorts. Some varieties of Northern Chinese race do fairly well in localities.

WESTERN NORTH FLORIDA.—For very early market, Alexander and Jessie Kerr; for early market, the Honey varieties named above, to which add Pallas and Climax. For mid-season market, Elberta, General Lee and Thurber. Alexander, Jessie Kerr, and General Lee are quite extensively grown, but Elberta is the leading peach. Here the Peen-to varieties are discarded. Like the Honey varieties, the Spanish varieties do well. Most varieties of Nothern Chinese race and some Persians (including those named and others) are well adapted. Great hopes are entertained of the recently imported Japan Dwarf Blood, which is the first of all to ripen, but it is of fair quality only, and a moderate grower.

PLUMS—(*Prunus*).

NOTE.—"J," as used in "Origin" column, means that the variety belongs to the Japanese class (*P. triflora*) but not necessarily imported from Japan.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.									Adaptability.			
		FRUIT.							TREE.					
		Use.	Size.	Form.	Color.	Class.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Abundance	J	a	l m	r pt	y & r	C	g	E	v	p	*	*		
2 Babcock	J	a	l	r pt	r	C	g	M	v	p	*	**		
3 Bailey	J	a	l	r	o & r	C	g	E			†	†		
4 Botan	J	a	l m	r c	y & r	C	g	E	v	p	*	**		
5 Burbank	J	a	l m	r	r & y	C	b	E	v	p	**	**		
6 Chabot	J	a	l	e c	l r	C	g	M			*	*		
7 Excelsior	J H	a	m	r	r p	C	b	V E	v	p	*	*		
8 Golden Beauty	A	a	m	r	y	C	g	L			*	†		
9 Kelsey	J	a	v l	h	g y	F	g	L	v	p	*	*		
10 Normand	J	a	l m	b c	y	F	g	E			†	†		
11 Pissard	?	c	m	r	p r	C	g	E	v	s	*	*	*	
12 Red Nagate	J	a	l m	e c	r p	C	g	V E			†	†		
13 Wild Goose	A	a	m	r	r	C	g	E			*	—	—	—
14 Willard	J	a	l m	r	d r	F	g	V E			†	†		
15 Yellow Japan	J	a	l	r	y & r	C	g	M			*	*		

REMARKS.—No. 4, well known and widely planted throughout the Lower South, where it is one of the best; introduced by P. J. Berckmans in 1886 as Botan; it has been sold under the names Sweet Botan, Yellow Fleshed Botan, Abundance and Berckmans, but it is doubtful if any of these names are properly applied to this variety. No. 7, seedling of Kelsey, supposed to be crossed with Cumberland or Wild Goose. No. 11, a handsome ornamental; fruit and foliage blood red.

PLUMS.—While plum growing has not attained commercial importance in this State, the recent introduction of the Japanese varieties, many of which seem well suited to sections of Upper Florida, has led to the general planting of this fruit. So far as tested, Burbank, Babcock, Botan and Kelsey have proved most desirable.

PEARS—(*Pyrus communis*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*)	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Bartlett	E	a	l	b p	y	v g	E	m	f	*	—	—	—
2 Garber	O	a	l	r b p	y & r	g	M	v		†	†	†	—
3 Jefferson		s					V E	g		*	†	—	—
4 Kieffer	O	a	v l	r b p	y & r	g	V L	v	v p	**	**	*	†
5 Lawson							V E	m	f	*	—	—	—
6 Le Conte	O	a	l	o l b p	g	g	E	v	v p	**	**	*	†
7 Smith	O	a	l	e p	g	g	E	v	p	**	**	*	

REMARKS.—No. 3, very early, showy; 4, desirable for late market; 6, 7, desirable for early market.

PEARS.—Pear culture has developed into a considerable industry in the Northern and Northwestern regions of the State. The Leconte and Kieffer are planted almost exclusively, the former largely predominating. Smith promises to rival Le Conte as an early variety for general planting, having some advantages over the latter, perhaps, in quality and earliness, and being equally vigorous and productive. For general market, the three varieties named give much better results than other sorts.

STOCKS.—It is essential to success with pears in this State, that they be propagated upon Le Conte or Japan pear stocks.

GRAPES—(*Vitis—Labrusca, Æstavalis, Vulpina, etc.*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION. Fruit. Bunch. Use.	Size.	Form.	Berry. Size.	Form.	Color	Quality.	Season.	Vine. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Concord	L	d n w	l	sh	l	r	b	g	M	g	f	*	*	*	—
2 Cynthiana	A	d w	m	shcp	s	r	b	v g	L	v	f	**	**	**	*
3 Delaware	H ?	a	s	shcp	s	r	r	b	M	g	p	*	*	*	—
4 Diamond	L	d s	m	shcp	m	r	w	g	V E	v	p	—	*	*	—
5 Elvira	R H	w	s	cp	m	r	w	g	M	g	p	*	*	*	—
6 Flowers	V	d n w	s	r	v l	e	b	f	V L	v	p	**	**	**	*
7 Goethe	H	d n	m		v l	e	w	v g	L	v	p		*	*	—
8 Herbemont	A	d w	m	shcp	s	r	b	v g	L	v	p	—	*	*	*
9 Ives	L	s w	m	cp	m	r e	b	f	V E	v	p	**	**	*	*
10 Niagara	L	d s	l	cp	m	r	w	g	V E	v	p	—	**	**	*
11 Norton	A	d w	m	shcp	s	r	b	g	L	v	f	**	**	**	—
12 Salem	H	d n	m	shcp	l	r	r	v g	M	v	f	—	*	*	—
13 Scuppernong	V	d n w	s	r	v l	r	bz w	g	V L	v	v p	**	**	**	—
14 Surprise	?	d n	l	cl	v l	r e	r b	v g	M	v	f	—	*	*	—
15 Thomas	V	d n w	s	r	v l	r	r b	g	V L	v	v p	**	**	**	**
16 Wilder	H	d n	l	br	v l	r	b	v g	M	v	f		*	*	

REMARKS.—Numbers 6, 13, 15, entirely free from fungus diseases; 2, 9, 11, almost free from fungus djseases; 1, 3, 4, 5, 10, subject to fungus diseases in wet seasons; 8, 12, 14, 16, subject to fungus diseases; 8, stars apply especially to the East Coast.

GRAPES.—In many locations throughout the State varieties (as indicated by the starring above) succeed well, and are quite extensively grown for shipment to Northern markets as well as for local consumption and the manufacture of wine.

FOR MARKET.—Delaware, Niagara, and Ives (only) have proved a success as shipping grapes for distant markets (when properly packed). Diamond, on account of its compactness and tendency to crack, does not stand long shipment.

FOR RED WINE.—Cynthiana, Norton and Ives are the red-wine grapes of Florida, as they are the red-wine grapes of the United States. Especially is this true of the first two named: their juice is dark and rich in saccharine matter, and the wine made from these two grapes is said to possess great medicinal properties, owing to its large percentage of tannin. From Thomas, a red wine of a special character can be made, which finds many admirers in the South.

FOR WHITE WINE.—Elvira, Delaware and Niagara are, among the varieties above named, the best grapes for white wine—especially dry wine. It is from Elvira that the celebrated San Luis Sauternes are made, which have established the reputation of Florida wines. Delaware is better adapted to the manufacture of sweet wine, and from Niagara a good dry wine can be made—much superior to the article made from Northern grown Niagaras, our Florida Niagaras being almost entirely free from that foxy taste so prominent in all Northern Labruscas.

THE MUSCATINE VARIETIES.—Flowers, Scuppernong and Thomas belong to this class, which is very distinct from the other grapes named. They are prodigious growers and bearers, a popular dessert and wine fruit in the South, but are not grown for Northern market.

EUROPEAN VARIETIES (*V. vinifera*) have finally proved an entire failure—even with those who, for a few years, seemed to have succeeded in growing them.

OTHER VARIETIES.—Besides the varieties described in the list above, other varieties may do well in particular localities or favored locations, and may be satisfactorily grown for family use, but varieties not included in this Catalogue should not be attempted on a large scale until their value has been demonstrated by experiment.

KAKI—Japanese Persimmons (*Diospyros Kaki*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Costata	J	d s	m	r c pt	s r	g	L	v	p	**	**	**	*
2 Hachiya	J	d s	v l	ob · pt	b r	f	E	g	s	*	*	*	*
3 Hyakume	J	d s	l	r f ob	o r	g	M	v	p	**	**	**	*
4 Okame	J	d s	l	r f g	b c r	v g	E&M	v	v p	**	**	**	*
5 Tabers No. 129	J	d s	m	r pt	o r	g	V E	v	p	**	**	**	*
6 Tane-nashi	J	d s	l	r c pt	l r	b	M	g	g	**	**	**	*
7 Tsuru	J	d s	l	ol pt	br	g	V L	v	v p	**	**	**	*
8 Yeddo-ichi	J	d s	m	r f	d r	v g	M	g	g	**	**	**	*
9 Yemon	J	d s	l	r f g	o & r	v g	M	v	p	**	**	**	*
10 Zengi	J	d s	s	r f	d r	g	V E	v	v p	*	*	*	*

THE KAKI succeeds well throughout the State, and is generally, though not extensively, grown. For market, this delicious fruit has the merit of shipping well and keeping long. While new markets are often reluctant to take hold of it, wherever known it sells well.

NOMENCLATURE.—While there has been much confusion in regard to the names of varieties, the

above kinds are now as well known as the leading varieties of other fruits; they embrace the most valuable kinds, and the names as given are correctly applied.

CHARACTERISTICS.—Some of the varieties have dark flesh, others light flesh, still others a mixture of the two. The light and dark flesh differ radically in texture and consistency as well as appearance, and when found in the same fruit are never blended but always distinct. The dark flesh is never astringent; the light flesh is astringent until it softens. The dark-fleshed fruit is crisp and meaty, like an apple, and is edible before it matures. Some of the entirely dark-fleshed kinds improve as they soften, like Hyakume and Yeddo-ichi; others are best when still hard, like Zengi and Taber's No. 129. As they are good to eat before they are ripe, it is not so important that the dark-fleshed kinds be allowed to reach a certain stage before being offered to consumers unfamiliar with the fruit. The light-fleshed kinds, and those with mixed light and dark flesh, are very delicious when they reach the custard-like consistency of full ripeness. In some the astringency disappears as the fruit begins to soften, as with Yemon, and in a less degree with Okame and Tane-nashi; in others it persists until the fruit is full ripe, as with Tsuru. The light-fleshed kinds should not be offered to consumers unacquainted with the fruit until in condition to be eaten. A person who has attempted to eat one of them when green and "puckery" will not be quick to repeat the experiment. Seeds accompany the dark flesh. The light-fleshed kinds are seedless. The kinds with mixed flesh have seeds in proportion to the quantity of dark flesh. Hyakume, Zengi and Hachiya are usually overspread at the blossom end with penciling or net-work of dark lines, and this sometimes occurs in other kinds.

VARIETIES.—Tane-nashi, Okame, Yemon and Yeddo-ichi excel in quality, perhaps in the order named. Okame (on account of the difficulty of getting the fruits all in the same stage of ripeness) and Hachiya are not as good shippers as the others; the latter is valued for its immense size and and showiness. Okame, on account of its long season, exquisite beauty, and superior quality, is the best for home use and local market. Zengi and Taber's No 129 are valued for their earliness, as are Tsuru and Costata for their lateness. Costata is very distinct and handsome in both tree and fruit. Hyakume is most generally grown of the dark-fleshed kinds. Tane-Nashi is, perhaps, most highly esteemed in market.

STOCK.—The Kaki should be grafted on the native persimmon, on which it is much more satisfactory than upon its own roots or imported stocks.

MINOR DECIDUOUS FRUITS.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv*)

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
APPLES—*Pyrus malus.*													
1 Jennings	N (?)	d n	l	f	g	g	E	v	p	*	*	†	—
2 Red Astrachan	E	d n	l	r	r	g	E			*			
APRICOTS—*Armeniaca vulgaris*													
3 Santa Fe	N	d n	m	r f	y & r	g	V E	v		*	*	†	
FIGS—*Ficus carica.*													
4 Black Ischia	F	d c n	m		b	g	S				*	*	
5 Blue Genoa	F	d c n	m		bl	g	S	m			*	*	
6 Brown Turkey	F	d c n	m		br	b	S	m	g		*	*	
7 Brunswick	F	d c n	l		v br	g	S	v	v p		*	*	
8 Celestial	F	d c n	s		p v	b	S	v	v p	*	*	*	
9 Green Ischia	F	d c n	m		g	g	S	v			*	*	
10 Lemon	F	d c n	m		y	g	S	v	v p		*	*	
11 White Marseilles	F	d c n	m		y w	g	S	v	v p		*	*	

MINOR DECIDUOUS FRUITS—Continued.

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
MULBERRIES—*Morus nigra*													
12 Downing	A		m	ol	b	g	E	v	s	*	*		
13 Hicks	A		m	ol	b	f	E&L	v	v p	* *	* *		
14 Stubbs	A		l	ol	b	g	M	v	p	* *	* *	* *	* *
15 Late (?)	A		m	ol	r b	b	L	v	p	*	*	*	*
POMEGRANATES—*Punica granatum.*													
16 Acid		d	l	r	r y		F	v	p	*	*	*	
17 Purple		d	l	r	r y	b	F	v	p	* *	* *	* *	
18 Sweet		d	l	r	r y	g	F	v	p	*	*	*	

REMARKS—Nos. 1 and 2, home use; 3, freestone, home use; 12, unsatisfactory bearer; 13, enormously productive; 14 and 15, superior quality acid; 17, most desirable.

APPLES AND APRICOTS—Are not recommended for general culture, although the varieties named give fair results in the home orchard in the regions indicated.

THE FIG—A most delicious fruit for the table and culinary use, thrives everywhere. It is not grown for shipment, but is one of the most valuable and generally grown home-use-and-local-market fruits. All the varieties named are desirable.

MULBERRIES—Are well adapted to all sections. They are largely grown for swine, poultry, and as a toll for birds; and, by some, the more acid kinds are esteemed for table use.

THE POMEGRANATE—An agreeable fruit, desirable for occasional use, and especially valuable as an ornamental shrub or tree, is not grown for market, but most plantations have a few trees.

NUTS.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION.					Adaptability.			
		FRUIT.			TREE.					
		Use.	Size.	Quality.	Vigor	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
CHESTNUTS—*Castanea.*										
1 Chincapin (*C. pumila*)	A	d n	s	v g	v	p	*	*		
2 Japan Chestnut (*C. Japonica*)	F	d c s	v l	g	v	g	*	*	*	†

NUTS—Continued

NAMES (*Varieties*).	Origin.	DESCRIPTION.					Adaptability.			
		FRUIT.			TREE.					
		Use.	Size.	Quality.	Vigor	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
PECANS—*Carya olivæformis.*										
3 Paper Shell	A	d s	l	b	v	p	**	*	*	
WALNUTS—*Juglans.*										
4 Japan Walnut (*J. Seiboldii*)	F	d	m	b	v		†	†	†	†

NUTS.—The Pecan has been long grown in the State in a small way, it flourishes in many localities, and its culture is profitable. The Japan Chestnut, of comparatively recent introduction, has, so far, proved well adapted. The Japan Walnut, of still more recent introduction, promises well; it is certainly the most desirable of the Juglans in this State.

MISCELLANEOUS FRUITS.

STRAWBERRIES—(*Fragaria*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.									Adaptability.			
		FRUIT.							PLANT.					
		Sex.	Use.	Size.	Form.	Color.	Quality.	Flesh.	Season.	Vigor.	Productiveness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Cloud	A	P	a	l	bo	d c	f	m	E&L	v	p	**	**	*	
2 Federal Point		B	d n				g	m		v	p		*	*	
3 Hoffman		B	s	m	c	d c	f	f	V E	m	f	*	*	*	
4 Lady Thompson		B	s	l	o	c	f	f	E	m	p	*	*		
5 Michel		B	d n	l	b c	y r	b	s	V E	v	p	*	*		
6 Newnan		B	a	m	o	c	f	f	E&L	m	p	**	**	**	
7 Wilson		B	a	m	o	d c	g	f	E&L	m	p	**	**	*	

REMARKS.—No. 2, highly prized for home use—not recommended for shipping.

STRAWBERRIES—Are extensively grown in sections of the upper portion of the State, for Northern markets. The Newnan and Wilson have been found most desirable for shipping. The Hoffman and Cloud are also raised to some extent for this purpose.

MINOR MISCELLANEOUS FRUITS.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		Fruit.						Trees or Plant.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
Blackberries—*Rubus villosus*.....	A	d n								* *	* *	*	
Dewberries—*Rubus canadensis*.....	A	d n								* *	* *	*	
Loquats—*Eriobotra Japonica*.....	F	d n	m	e	y	v g	Sp	v	p	*	*	**	
Olives—*Oleo Europea*.....	F	c s	s	e	r b		F	v	p	*	*	*	
Surinam Cherry (*Eugenia Micheli*)...	E I	d c	s	r		y						*	*

Dewberries, also Blackberries in some varieties, succeed admirably in the regions indicated, but are not cultivated to any considerable extent, owing to the abundance of native, wild berries.

Loquats—Are quite generally grown in a small way for home consumption. They are a very desirable fruit for table, as well as culinary use. At present the Loquat is propagated from seed, and the fruit varies greatly in size and quality. Improved varieties should be originated and disseminated.

Olives—Do well. Many trees have been planted, and there are some old groves. The varieties, of which there are many, are not sufficiently known in this State to catalogue.

The Surinam Cherry—A delicious, acid fruit—is grown to a limited extent, for home use.

TROPICAL FRUITS.

PINEAPPLES—(*Annas sativa*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		Fruit.						Plant.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Abachi (*Abakka*).....	F	d c	m	ol		b	S			—	—	Require protection	* * * †
2 Black Antigua.....	F	d c	l	ol	d	b	S			—	—		
3 Black Jamaica.....	F	d c	l	ol	d y	b	S			—	—		
4 Black Prince.....	F	d c	l	c		b	S			—	—		

PINEAPPLES—Continued.

NAMES (*Varieties*).	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree or Plant. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
5 Blood	F	d c	m			g	S			—	—	—	†
6 Crown Prince	F	d c	l	c		b	S			—	—	—	†
7 Charlotte Rothschild	F	d c	m	c		b	S			—	—	—	†
8 Egyptian Queen	F	d c s	m	c	y	b	S	v	p	—	—	*	†
9 Lady Beatrice	F	d c	l	c		b	S			—	—	—	†
10 Lord Carrington	F	d c	l	c		b	S			—	—	—	†
11 Mammoth Kew	F	d c	v l			b	S			—	—	—	†
12 Prince Albert	F	d c	l	e		b	S			—	—	—	†
13 Porto Rico	F	d c	v l	r	y	g	S			—	—	—	**
14 Red Spanish	F	d c s	m	r	r y	f	S	v	v p	—	—	—	**
15 Ripley Queen	F	d c	m	c	y	b	S			—	—	—	**
16 Smooth Cayenne	F	d c	l	e		g	S			—	—	—	*
17 Sugar Loaf	F	d c	m	c	y	b	S			—	—	—	*
18 Trinidad	F	d c	l	c	y	b	S			—	—	—	†
19 White Antigua	F	d c	m	ol	l	b	S			—	—	—	†

Require protection.

PINEAPPLE CULTURE—Is one of the most extensive fruit-growing industries in the State.

VARIETIES.—The Red Spanish is the variety generally grown for market; it is also known as "Black Spanish", "Scarlet Key", "Largo", "Havana", "Cuban", "Strawberry", etc. The Egyptian Queen is also planted, to some extent, for market.

BANANAS—(*Musa*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION. Fruit. Use.	Size.	Form.	Color.	Quality.	Season.	Tree. Vigor.	Prolificness.	Adaptability. Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Baracoa (*Red Jamaica*)	W I	d s	l		r	g		v	p	—	—	—	**
2 Cavendish	E I	d s	m		y	b		v	p	—	—	—	**
3 Golden (*Tahiti ?*)	W I	d n	l		y	g		v	p	—	—	—	**
4 Harts Choice	W I	d n	s		y	b		v	p	—	—	—	**
5 Magnifera	W I	d s	l		r	g		v	p	—	—	*	†
6 Orinoco ("*Horse Banana*")	S A	d c n	l		y	f		v	p	—	—	—	**

REMARKS—On varieties as numbered above. Nos. 1, 2 and 3, general market: 4 and 6, home use.

COMMERCIAL BANANA CULTURE is confined to the extreme lower portions of the peninsula.

VARIETIES. The Baracoa is the ordinary Red Banana of commerce. The Cavendish (*M. Cavendishii*) is a dwarf species, also known as "Dwarf", "Dwarf Jamaica", "Chinese", "Martinique". Except the Orinoco, Harts Choice has a more northern range than the other sorts. The Orinoco matures farther north than any other variety, it is an ordinary plantain (*M. paradisica sapientum*) as distinguished from the Banana or Sweet Plantain (of which Baracoa and Golden are varieties): when allowed to ripen on the plant, it is of good quality, and desirable for home use, in sections too far north for other kinds.

GUAVAS—(*Psidium*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						PLANT.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Common Guava (*P. Guaiava*)—many unnamed varieties	WI	d c n					S & F	v	v p	—	—	*	**
2 White Winter (*P. Guaiava*)	WI	d c n	m	p	g	g	F	v	p	—	—	*	**
3 Cattley (*P. Gattleyanum*)	A	c n	s	r	r	g	S & F	v	p		*	**	**
4 Chinese (*P. luidum*)		c n	s	r	y	g	S & F	v	p		*	**	**

REMARKS—On varieties as numbered above. No. 2, distinct and desirable; 3 and 4, hardy.

THE GUAVA Is quite extensively grown in Central and Southern Florida for home use, local market, and the manufacture of jelly. It is a most delicious fruit for dessert, as well as cooking and preserving. There are numerous varieties, as yet unclassified. The hardy kinds, Cattley and Chinese, have about the same range as oranges.

MANGOES—(*Mangifera Indica*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES (*Varieties*).	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
1 Common (the ordinary sort)	E I	d c n	l	k	y & r	g	S	v	p	—	—	*	*
2 Apricot	WI	d c n	m	k	r & y	v g	S	v	p	—	—	*	**
3 No. 11 (*Apple*)	WI	d c n	l	r	y	v g	S	v	p	—	—	*	**

MANGOES.—Are very generally grown in Tropical Florida for home consumption, local market, and to some extent for shipment. Many new sorts, of probable superiority, have been introduced in recent years, but have not been sufficiently tested to be catalogued.

COCOANUTS—(*Cocos nucifera*).

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
Seedlings	F	d c s	l	r	br	b	Ev	v	p	—	—	—	**

Extensive COCOANUT plantations are to be found on the southern coast. Little or no attention has been paid to varieties.

MINOR TROPICAL FRUITS.

(*See "EXPLANATION OF ABBREVIATIONS", on page iv.*)

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE OR PLANT.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern Norte Fla.	Central Florida.	Southern Florida.
1 Avocado Pear (*Persea gratissima*)	W I	d c s	l	p	y&br	g	S & F	v	p	—	—	—	**
2 Cherimoya (*Anona cherimolia*)	S A	d n	l	e	br y	g	S	v	p	—	—	—	**
3 Custard Apple (*Anona reticulata*)	W I	d c	l	c	g	g	S	v		—	—	—	*
4 Granadilla (*Passiflora edulis*)	W I	d c	m	r	l r	g	S	v		—	—	*	*
5 Hog Plum (*Spondius lutea*)	W I	d	s	r	g	b	S	v		—	—	—	*
6 Jamaica Sorrel (*Hibiscus sabdiriffa*)	E I	c	m		r		F	v	p	*	*	**	**
7 Mammee Apple (*Mammea Americana*)	W I	d s	l	r	br	g	S			—	—	—	*
8 Mammee Sapota (*Lucuma mammosa*)	W I	d s	l	e	y	g	S			—	—	—	*
9 Otaheite Gooseberry (*Cicca disticha*)	W I	c	s	r	w	g		v	p	—	—	—	*

MINOR TROPICAL FRUITS—Continued.

NAMES.	Origin.	DESCRIPTION.								Adaptability.			
		FRUIT.						TREE OR PLANT.					
		Use.	Size.	Form.	Color.	Quality.	Season.	Vigor.	Prolificness.	Western North Fla.	Eastern North Fla.	Central Florida.	Southern Florida.
10 Pawpaw (*Carica papaya*).....	E&W I	d c n	l	e	y	f	Ev	v	p	—	—	—	**
11 Rose Apple (*Eugenia Jambos*)..	E I	d c	m	r	l	f	Sp & S	v	p	—	—	—	**
12 Sapodilla (*Achras sapota*).....	W I	d s	m	r	br	g	Ev	v	p	—	—	—	**
13 Sour Sop (*Anona muricata*).....	W I	c	l	c	g	g	S	v	p	—	—	—	*
14 Spanish Lime (*Melicocca bijuga*)	W I	d	s	r	g	g	S	v	p	—	—	—	**
15 Star Apple (*Chrysophllum cainito*).....	W I	d	m	r	g	g	Sp	v	p	—	—	*	*
16 Sugar Apple (*Anona squamosa*)	W I	d c	m	c	g	g	S & F	v	p	—	—	*	**
17 Tamarind (*Tamarindus Indicus*)	E I	d s	s m	pod	br	f	Ev	v	p	—	—	—	**

REMARKS On species as numbered above. Nos. 1, 7, 12 and 17 sell well in general market; 2, 3 and 16, much admired in the tropics; 5, delicious; 6 and 9, desirable for cooking; 13 and 17 esteemed for acid drink; 4, 6, 9, and 11, especially fine for jelly.

THE MINOR TROPICAL FRUITS—Listed above are none of them raised for market on a large scale, but all are desirable, and are extensively grown, over a more or less extended area, in the more tropical regions of the State, a number being produced in considerable quantities for local market or consumption. A few, like the Mammee Apple, Sapodilla and Avocado Pear, ship well and find ready sale; the Avocado Pear has brought good prices in the New York market. Some, like the foregoing, the Star Apple and the Hog Plum, are agreeable to most palates upon first acquaintance; others, like the Sugar Apple, Cherimoya, and Sour Sop, which are much esteemed by those accustomed to the fruit, require an acquired taste to be appreciated. A number are grown for home use, almost or quite exclusively, either because too tender for transportation, like the Sugar Apple and Pawpaw, or for their value for culinary purposes; of the latter, the Otaheite Gooseberry is a valuable acid fruit for cooking and preserving; the Jamaica Sorrel is not a fruit, in the proper sense, but produces a pulpy calyx, which makes an excellent substitute for cranberries; the acid Sour Sop is used for flavoring, preparing drinks, etc., and is much esteemed in sickness. The Tamarind bears a pod with a pleasant acid pulp, which, preserved in sugar, finds ready sale in the general market.

FLORIDA * STATE

1895

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